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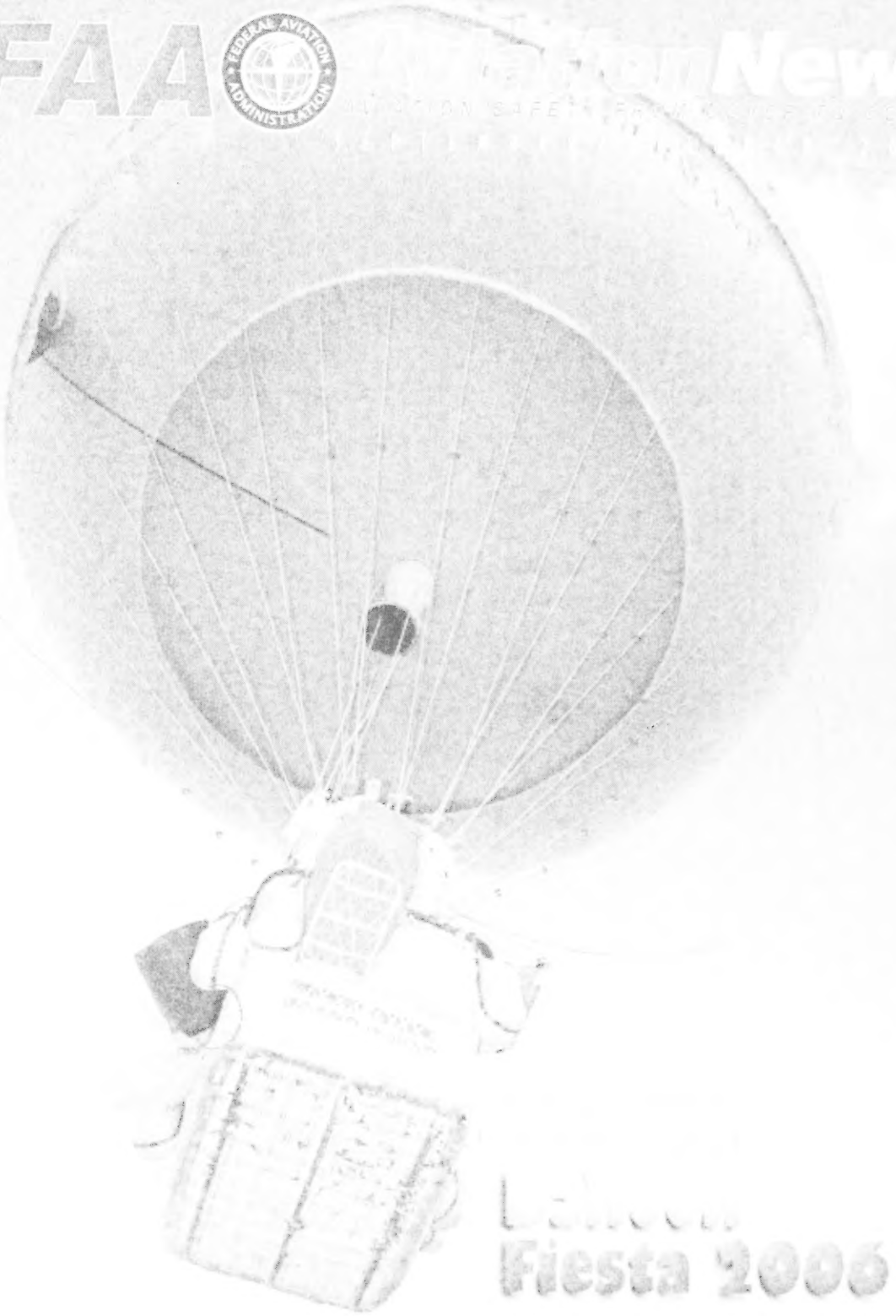

Fiesta 2006

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FRONT COVER: A participant in the 2005 Gordon Bennett Coupe, the premier international gas balloon race, launches from Fiesta Park. (A. Mario Toscano Photo)

BACK COVER: Can you identify the aircraft in this Ray Stinchcomb photo? Send your entry to: <Dean.Chamberlain@faa.gov>

Balloon Fiesta® 2006

Story and photos by A. Mario Toscano

"Out of the Blue"

Albuquerque, New Mexico, the "ballooning capital of the world" is ready to see the balloons "come out of the blue!" It is the center stage for the 35th International Balloon Fiesta® from October 6 to 15. Fiesta organizers expect more than 750 hot air and gas balloons. The 11th America's Challenge Gas Balloon Race—qualifier for U.S. teams to participate in the Coupe Aeronautique Gordon Bennett, the world's most prestigious gas balloon race — is scheduled to launch at 6 p.m. on Saturday, October 7.

The Albuquerque International Balloon Fiesta® drew nearly 800,000 visitors last year to the world's largest ballooning event. Fiesta officials said that 700 balloons from 41 states and 18 countries flew at the event. A total of 89 special shapes balloons and 26 gas balloons participated in Fiesta 2005. The final estimate of people going through the gates of the Albuquerque's Balloon Fiesta Park was 778,367. A total of 762 media representatives from 316 national and international media organizations, including the *FAA Aviation News*, covered the event.

The first prize in the overall hot air balloon competition was awarded to Arizona pilot Gary Cass. Belgium's Bob Berden and Benoit Simons won the 49th Coupe Aeronautique Gordon Bennett. The team of Janet Folkes of the United Kingdom and Bill Arras of the United States won the 10th America's Challenge Gas Balloon Race.

Last November, the 24-member volunteer board of directors that manages Albuquerque International Balloon Fiesta® elected Gary D. Bennett as new president and Ray Bair as Vice President.

49th COUPE AERONAUTIQUE GORDON BENNETT

Last October, Bob Berden and Benoit Simeons from Belgium won the 2005 Gordon Bennett race flying from Albuquerque to southeastern Quebec, Canada, for a record 2,112 miles in 64.98 hours.

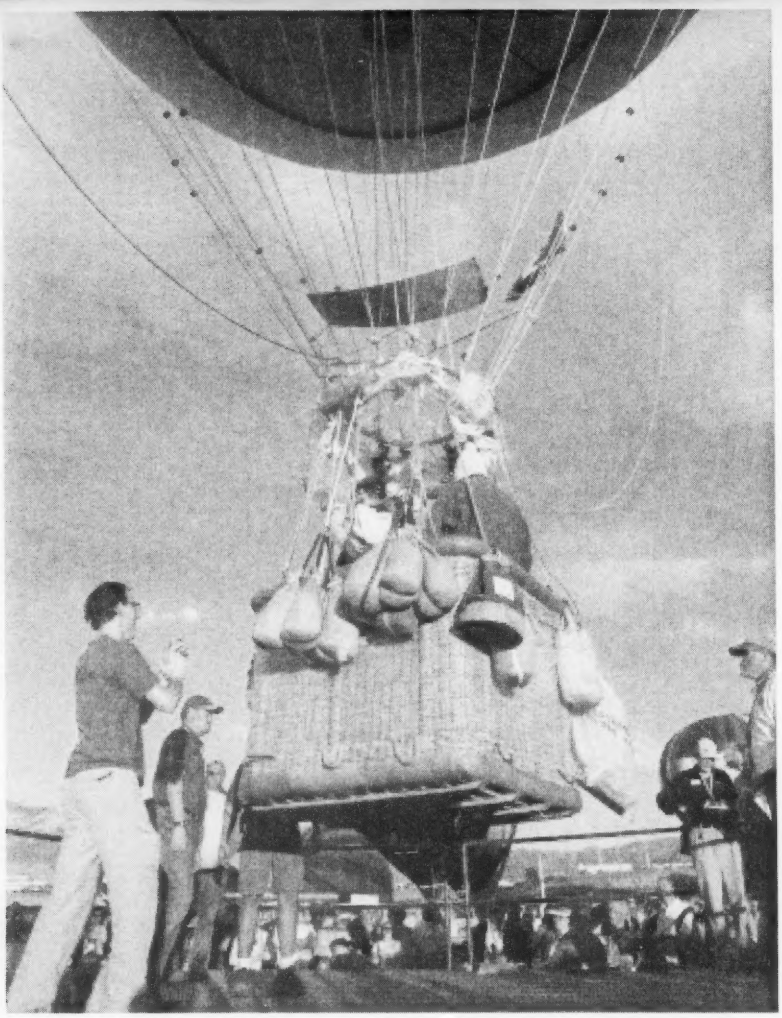
The German team of Wilhelm Eimers and Ullrich Seel was second with 1,604 miles in 46.15 hours. Christian Stoll and Walter Mattenberger from Switzerland were third in the competition with 1,409 miles in 42.98 hours.

U.S. team of Dr. Carol Rymer Davis and Richard Abruzzo, defended the Gordon Bennett traveling trophy they won the year before in Thionville, France. Unfortunately, a freak accident put an end to their hope of retaining the trophy.

Dr. Carol Rymer Davis and Benny Abruzzo, representing his brother Richard, presented the Gordon Bennett trophy to the 2005 champions. Richard Abruzzo was hospitalized, at the time, from injuries he received when he fell from his USA-1 balloon during the competition. See our interview with Dr. Carol Rymer Davis on page four.

The 50th Gordon Bennett is scheduled for lift off on September 9 in Waasmunster, Belgium. Three U.S. teams are participating: Barbara Fricke and Peter Cuneo, Phil MacNutt and Richard Abruzzo, and Andy Cayton and Dan Suskin.

More information about the Gordon Bennett race is available on-line



at <http://www.coupegordonbennett.org> and this year's race information is available a <http://www.gasballon.be/gb2006/index.php>.

10th AMERICA'S CHALLENGE GAS RACE

The team of Janet Folkes of the United Kingdom and Bill Arras of the United States won the 10th America's Challenge gas balloon race flying 1,495 miles in 46.14 hours. The U.S. team of Barbara Fricke and Peter Cuneo arrived second with 1,436 miles in 45.08 hours. The United Kingdom team of David Hempleman-Adams and Jonathan Mason was third with 1,265 miles in 42.31 hours. Twelve gas balloons participated in the event.

The America's Challenge Gas Race is a qualifier for U.S. representation in the Coupe Aeronautique Gordon Bennett.

The Education Committee of the Albuquerque Aerostat Ascension Association (Quad-A), as it customarily does before each gas race, held a special seminar for all participating teams. FAA's Albuquerque Flight Standards District Office (FSDO), Air Traffic Control, and Lockheed Martin's Automated Flight Service Station (AFSS) personnel presented pertinent information on charts, air traffic control centers, communications, weather, and flight services along with other topics related to the safety of the race.

BALLOON FIESTA SAFETY SEMINAR

The Quad-A Education Committee also hosts a "Balloon Fiesta Safety Seminar" on Tuesday, October 10 at the Balloon Fiesta. It is open to all balloonists wishing to attend. Last year, more than 300 balloonists attended the program that includes an in-depth safety presentation from the FAA's Albuquerque FSDO Safety Program Manager, J.D. Huss. The Quad-A's Web site, <http://www.hotairballooning.org>, is a "must-visit" for balloonists. In addition to downloadable material such as safety information, area maps, schedule of safety seminars, and the latest about Fiesta, it provides valuable links to its visitors.

TEMPORARY FLIGHT SERVICE STATION

The Albuquerque AFSS, now operated by Lockheed Martin under an FAA contract, will staff a remote AFSS in Fiesta Park to provide online and live services directly to the pilots and crews participating in Balloon Fiesta® 2006.

Lockheed Martin Operations Manager of the Albuquerque AFSS, Thomas C. Wimber, will have a crew set up and run the "Temporary Flight Service Station" in the pilots' tent. The AFSS personnel will answer questions and provide early morning weather briefings upon request. Pilots can also obtain a weather briefing over the phone by calling 1-800-992-7433 (1-800-WX-BRIEF), or (505)243-7831. Lockheed Martin pilot information portal on the Internet is at <http://www.afss.com>.

Albuquerque AFSS personnel will also staff the America's Challenge Gas Balloon Race Command Center to provide weather and aeronautical information to race contestants and officials as contenders fly across the United States.

FAA'S ALBUQUERQUE AIR TRAFFIC CONTROL

The Albuquerque Air Traffic Control Tower's (ABQ ATCT) goal is maximum safety for the event. Rick Henson, ABQ ATCT acting manager, works closely with event officials and all the FAA facilities involved with Fiesta to provide efficient air traffic sup-

port. "The ultimate goal is to figure out the safest way to avoid conflicts with airplanes and helicopters during balloon operations," he says.

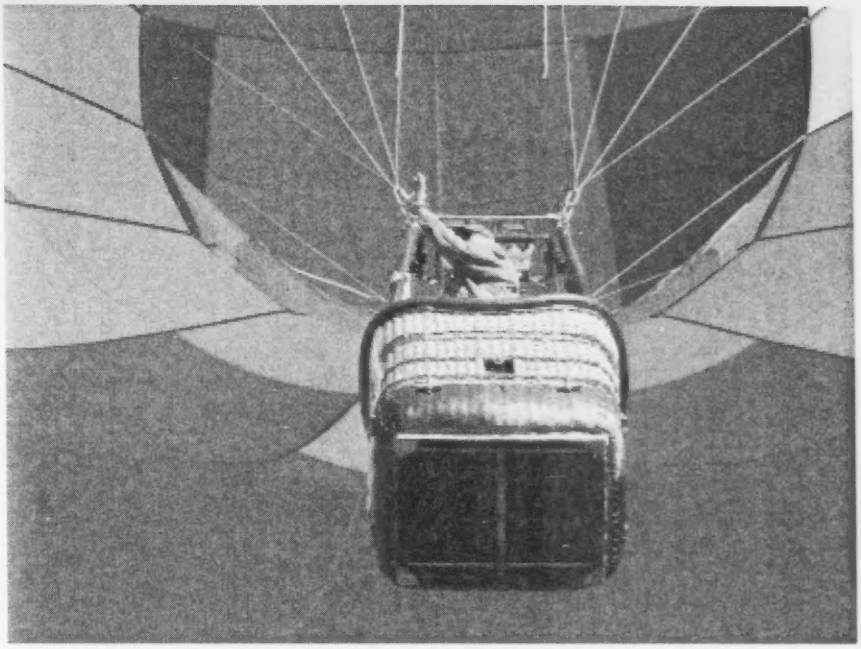
"The FAA community works closely with the balloon community to make this the biggest and safest ballooning event in the country. It is a collaborative effort on all our parts to ensure the event proceeds as planned, and at the same time, with as minimal impact as possible to the rest of the flying community," says Henson.

ABQ air traffic controllers are present each day at Balloon Fiesta relaying information between the field and the tower, coordinating the closure and release of airspace, identifying aircraft entering restricted airspace, and identifying any possible security issues. Personnel in the tower and terminal radar approach control (TRACON) pass along this information as needed to security personnel, keep the flying public clear of the restricted airspace, and work around hundreds of balloons to get aircraft to and from the airport in a safe and efficient manner. Occasionally, balloons land on the airport. "When this occurs, close coordination with the City Aviation Department results in the expedient removal of the balloon and associated personnel from the airport while maintaining a safe environment for arriving and departing aircraft on other runways," explains Henson.

THE FSDO IN THE PILOTS AND CREW TENT

The Albuquerque FSDO is also scheduled to have its customary remote facility in the pilots and crew tent at Balloon Fiesta Park. The FAA has the responsibility to review the certificates and the currency of all participating pilots, as well as each entrant's balloon's airworthiness. Just like airplane pilots, balloon pilots must also meet federal requirements for certification. Balloons must be inspected for their airworthiness every year or every 100 hours of flight time if flown for hire.

Tamara Bell, an aviation safety inspector with the Albuquerque FSDO, is the 2006 Fiesta's designated inspector in charge (IIC). In addition to managing the FAA's resources at the pilots and crew tent, she ensures that all FAA safety and regulatory requirements are met. Tamara deals with all last minute issues to ensure that Fiesta events are safe for participants and all spectators. To help her manage the large workload during Fiesta, the FAA selects and sends several inspectors from neighboring FSDO's to augment the FAA's temporary "office" at Fiesta Park.



FIESTA TIME...OUT OF THE BLUE!

The eyes of the world are on Albuquerque for Fiesta. The red carpet is out for participants and visitors as the first event begins this year's festivities on October 6. Balloon enthusiasts will savor 10 days of exciting events with daily mass ascensions and balloon flying events.

Albuquerque International Balloon Fiesta® is considered the largest and most photographed ballooning event in the world. In addition to the thousands of spectators who visit Fiesta Park each year, millions see the event on television segments worldwide from the inaugural mass ascension to the farewell mass ascension, the gas and hot air balloon races, evening glow spectacles and special shapes ascensions,

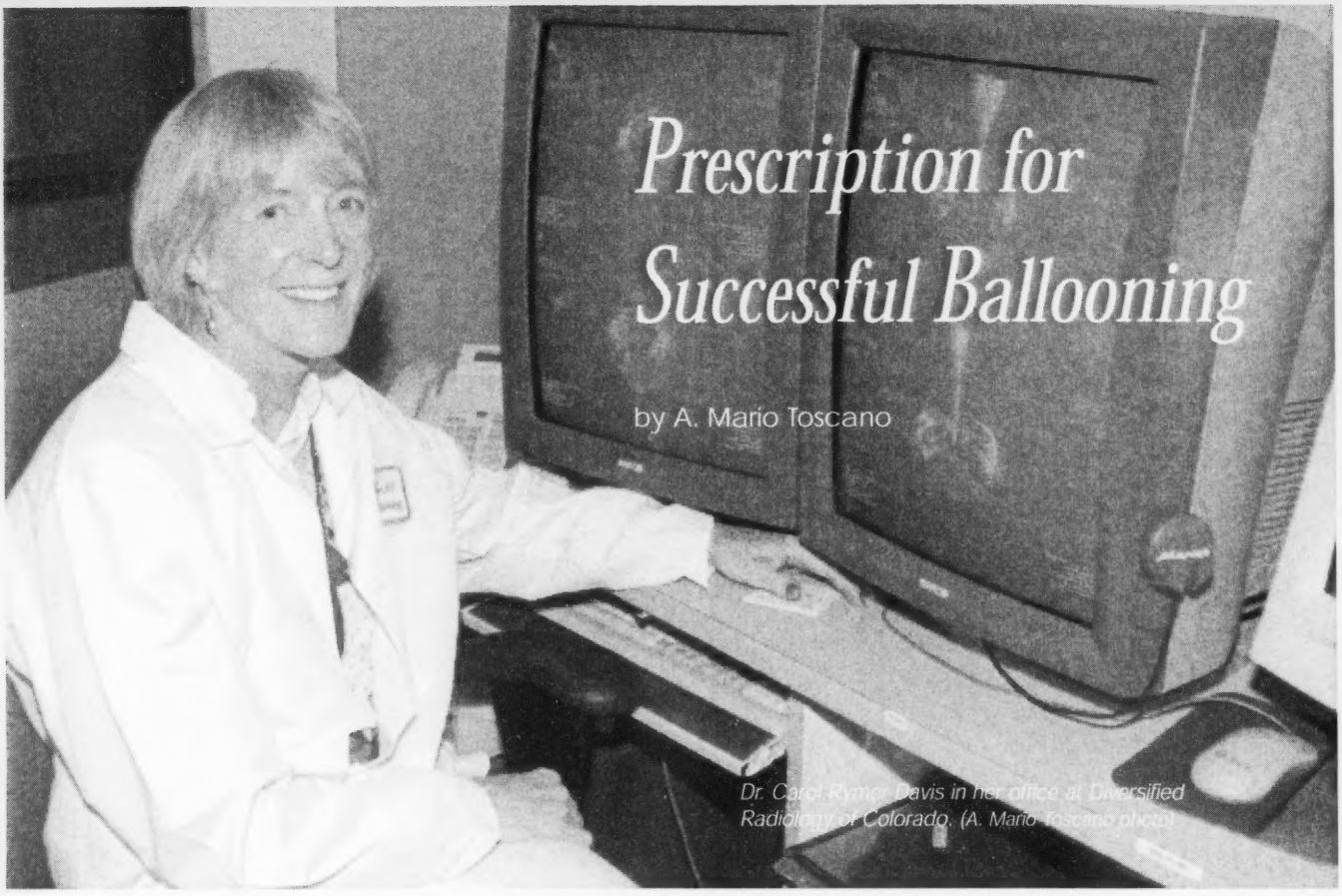
Behind the scenes, Fiesta is an extremely well run organization. The safety in ballooning and in Fiesta Park during operations is the primary objective of Fiesta event director Pat Brake. She advocates and insists that all her volunteers—more than 2,000 of them each year—have the safety of visitors and participants foremost on their mind. Pat Brake's team does an "outstanding, all-around job" in keeping Fiesta and Albuquerque's skies safe. The FAA has succeeded in maintaining a high safety record through the years at Fiesta because of this genuine collaboration with event organizers, their leadership, dedication, and responsibility. All participants are to be commended for it!

If you are a participating pilot or crew in 2006 Fiesta, we renew our invitation for you to drop by the pilots tent for an AFSS briefing, to see the FSDO team and get a free copy of *FAA Aviation News*, or just to say hello. We look forward to seeing you there!

Thanks to the Albuquerque FSDO manager John Wensel, to its personnel, and to 2005 Balloon Fiesta IIC Tamara Bell for their support and help in facilitating our coverage of 2005 Balloon Fiesta and for this report on the upcoming Balloon Fiesta® 2006.

Prescription for Successful Ballooning

by A. Mario Toscano



Dr. Carol Rymer Davis in her office at Diversified Radiology of Colorado. (A. Mario Toscano photo)

Editor's Note: FAA Aviation News *visited with Sabiha Gokcen Medal winner, Dr. Carol Rymer Davis, in her home in Denver, Colorado. In addition to being a world class hot air and gas balloonist, she also competes actively in several other sports including mountain climbing, running, skiing and cycling.*

The prescription for successful ballooning is brief, simple, and requires disciplined commitment. Balance your "body, mind, and spirit" is the prescription offered by Dr. Carol Rymer Davis, one of the leading U.S. women in international competitive ballooning. It worked well enough for Carol and her co-pilot Richard Abruzzo to bring home the coveted Coupe Aeronautique Gordon Bennett gas balloon race trophy in September of 2004. The winner is the balloon that flies the longest distance. She is also the first woman to win this premier international gas ballooning event. A downdraft in Kansas prematurely ended their 2005 attempt to defend their win, but more on that later.

IN THE BEGINNING, A BALLOON AND A BICYCLE!

It was in 1970 in Albuquerque, New Mexico, recalls Carol. "We [Carol and her husband John C. Davis, IV] saw a special on educational TV about ballooning...and John, having flown everything in the world except balloons, said, that would be kind of fun! So we found a man with a balloon who was willing to sell out six shares in it, and in exchange for owning one sixth of the balloon he would teach us how to fly it. He wanted $1,000," she emphasizes.

"I was a resident in radiology at the time and didn't have $1,000. So, I sold my car—my little red Ford Pinto with black and white interior—bought my share in the balloon and rode my bicycle to work. I still ride a bicycle to work!" Following that, they added a second, then a third balloon, and, what follows is her fascinating 35 years in ballooning.

LEARNING TO FLY, THE HARD WAY!

Dr. Carol Rymer Davis began her balloon career in 1971. A "rudimentary start," she says. "I learned the hard way—by flying a lot. In addition to flying, I taught balloon aeronautics and ground school at the Quad-A (Albuquerque Aerostat Ascension Association) in Albuquerque, got the gas balloon rating in 1975, and that added another dimension to my ballooning experience." In the late 1970s she went after altitude and other world records, and in 1979 she set the record for altitude in AX-5 hot air balloons, ascending to 31,300 feet. Her record still stands today.

"After ten years of a lot of fun—pretty much true ballooning—in the 80s I went ballooning in a net-less gas balloon designed by my husband John with Raven Industries. John and I flew gas a fair amount," she recalls.

In 1990 she was activated for Operation Desert Storm and mobilized in Texas. When the war was over, she was transferred to nuclear medicine, her secondary specialty, and served in the U.S. Army for another 26 months. She then found a job as a radiologist in her native Denver and moved back home to join Diversified Radiology of Colorado, a large group practice of about 60 radiologists with branches over a large portion of the state of Colorado.

In 1996 Richard Abruzzo asked Carol to fly with him for the first time. "And, we have flown every year since," she explains. "Once, twice, sometimes three times in a year, so [the experience] has all been essential to my ability to fly, especially in relationship to what happened last year at Fiesta."

2005 GORDON BENNETT CHALLENGE

The location of the yearly Gordon Bennett balloon race is determined by the winner's country of origin. Carol and Richard won in 2004, therefore the U.S. was host for the 2005 race and what better place to start the race than in Albuquerque during Fiesta. Carol and Richard's defense of their Coupe win in their USA-1 balloon lasted about 22 hours, ending near Kendall, Kansas, some 400 miles from Albuquerque's Balloon Fiesta Park launch site. Aloft and cruising at about 35 mph in smooth air at 7,000 feet MSL, the couple encountered mid-afternoon thermals and a sudden and unexpected downdraft.

According to the National Transportation Safety Board (NTSB) brief of the accident, "the dry thermals forced the balloon [USA-1] into an extreme and uncontrolled descent. The variometer pegged a 1,500 feet per minute descent rate." The crew attempted unsuccessfully to arrest the descent rate by throwing ballast overboard, and the balloon ended up colliding with power lines.

"The entangled gondola severed the power lines and the balloon ascended rapidly. As it ascended, the gondola pitched violently as much as 60 degrees and the pilot fell out at a height of approximately 30 to 40 feet. The balloon ascended with copilot still on board. Using a satellite telephone, she notified the chase crew and gave them the location of the accident. The balloon ascended to 14,000 feet MSL before the copilot was able to execute a controlled descent. The balloon hit the ground hard approximately eight miles from the accident site," says the NTSB brief summary.

"When we got caught in the downdraft," recalls Carol, "...things happened very quickly and we responded. Both of us knew right away that there was something terribly wrong, and we sat there talking like you were talking at dinner. You go through all the options, what to do, and the ground is coming up very quickly. Richard looked at the trail rope. In a gas balloon, if you're going to hit the ground, what you can do is deploy [to non-balloonist this translates to throwing out] the trail rope, and that's 40 lbs. of recoverable ballast. Throw it out and it slows down your descent, and if you hit it is not very hard and when you go back up, you still have that ballast with you instead of throwing out sand," explains Carol. This time it wasn't enough.

Dr. Carol Rymer Davis and Richard Abruzzo launch in the 2005 Gordon Bennett Coupe. (A. Mario Toscano photo)

GOING DOWN—FAST!

"I turned around and grabbed what we call the 'kitty litter' basket—which is a couple of bags of ballast—and emptied it...we were going down fast! Richard grabbed the knife we had on board and was ready to cut the trail rope, which we had done in another flight, but we saw (it was about 4 p.m. local time) some roads in front of us going north and south, and another road going across east/west. You couldn't see the lines initially, but as we got closer we could see there were power lines. We decided not to cut the rope, but try to get rid of more ballast and maybe rise. Suddenly, we were suspended! We were going at about 50 mph, and we were suspended, for just a moment, on the top line of the power lines. The force of the balloon as it was caught in the line broke it and, when it broke, the basket went like this [Carol motions to a pitch of about 60 degrees] and Richard got catapulted out.

"I was thrown down inside the basket. When I stood up and looked over the side, I was at about 1,000 feet. I looked back but didn't see Richard," she recalls.

"It took all the collective learning that I had—not only in ballooning but from the U.S. Army, from my survival training, from everything I ever had—to pull myself together. I immediately looked for the satellite phone and called the crew, told them to call the command center (at Fiesta Park), and read off the last hit on our GPS. I had

Above: Carol after landing near Kendall, Kansas. Below, a close up of the valve, trail rope, and other remnants of the balloon after the abrupt landing. (Dr. Carol Rymer Davis collection of photos)

not moved that far horizontally from where Richard had fallen. I read off the coordinates. It was terrifying the thought of losing Richard, one of my best friends. I didn't know if he survived or if he was dead. I looked back at the road and I couldn't see him and all that I could imagine is that he was dead!

"So, I went up to, I think 14,000 feet... just screaming up! Meantime, the crew got a hold of the command center and told them I've been in an accident," she pauses to reflect.

A FRIGHTENING, CALM THOUGHT

"Then, I had this very calm thought in the middle of this very frightening experience. I think there is only one way I can get out of this alive and that is to gather myself together and land the balloon. So when I got to 14,000 feet, I pulled the valve and started to come back down. I gathered things into the basket—four or five bags of ballast and I still had the trail rope that should lay outside the basket, but was actually inside where Richard used to be. I would just have to toss the rope out as it had come out of its 'diaper.' I gathered everything together and came in, making a perfect approach to a high wind, 50 to 55 mph depending who you talk to. I threw the trail rope and three or four bags of ballast, and probably landed at 600 to 800 feet a minute which is exacty what I wanted to do in this kind of situation," Carol explains.

"I pulled the line to the deflation port [to release the gas], but it didn't open. When the top didn't open, I pulled the valve line on the very top, just like on a hot air balloon, and I fell in the bottom of the basket and held it. It takes a very long time to let all that gas go out through that line, but that's the only thing I had at that time. It didn't work fast enough," she laments. "I am now in this small jail being dragged across the countryside by the still inflated balloon, and everything is flying out. The basket is turning and twisting. I look up and see a fence and a power line, and there's absolutely nothing that I can do to change direction," she exclaims.

"I went through both. The balloon cut the bottom power line, but it was not conductive and sailed through that. Then I went into a ravine where the basket turned upside down in what we call 'dog housing.' I was being dragged on the ground beneath the basket, and then it hit something else and turned right side up again. With that, I got pushed out the side of the basket and was dragged behind the basket by one foot. Finally, I pulled my foot out of my shoe and got lose. The basket kept on going," Carol motions a sigh of relief. "I had gone downwind probably about 10 miles in approximately 15 minutes. It had seemed like a lifetime!

THIS EXPERIENCE IS OVER!

"I didn't have anything on me. No radio, nothing. Everything had flown out. I picked myself up and started picking things up as I walked up the track where the balloon went. It ran into a barbed wire fence, and then through a corn field. When it went

through the barbed wire fence, it shredded part of the balloon, so if I had stayed with it, it would have come to rest before it actually did," she explains. The balloon traveled for another mile and a half down its path. "I had seen a road with my peripheral vision and walked up to the road.

"So as I walk up to the road, there is a sheriff driving up. A couple of minutes later the ambulance arrives. The only thing I had was a lot of road rash where I'd been dragged, especially on my elbows." Dr. Carol Rymer Davis credits her and Abruzzo's firm belief in mental and physical health for making a big difference in his survival from an approximately 30 to 40 feet fall, and her walking away from that accident. Abruzzo suffered a fractured pelvis, displaced ribs, and a shattered forearm and wrist.

SAFETY IN BALLOONING, NEVER STOP LEARNING!

Responding to a *FAA Aviation News* question about safety and the lessons she learned from last year's Gordon Bennett race, Carol offered that when she first started flying gas balloons she always had a knife with her and knew where it was. Last year there was only one knife on board USA-1. As they encountered the downdraft in Kansas, "Richard grabbed that knife to cut the diaper rope. When we decided not to cut it, I turned back to try to get more ballast off the basket. If I had a knife of my own," Carol points out, "I would have been able to get the bag of ballast off easily. It sounds very simple, but I will always have a knife on me.

"The other thing is that I will probably fly with a sand bag readily accessible. I emptied the 'kitty litter,' but wished I had something else more readily available than everything tied up around the inside of the basket. Probably I will always have a bag inside that is easy to remove. This is basically the draw from such a horror story," said Carol intently.

"I think we reacted as quickly as we could to the situation and as well as possible. It was just the wrong place at the wrong time. One of the deputy sheriffs said, as he looked up at the power line we hit, there were no power lines two miles in either direction from here. It was just so unlucky! We were in the middle of Kansas, a part of the country where the roads are five miles apart. As I came in there was an oil derrick and I thought, this is so unfair! I was headed right to it. I came in, veered off, and missed it by 40/50 feet. I didn't need that!"

While landing, Carol fortunately missed this derrick by 40/50 feet. (Dr. Carol Rymer Davis collection photo)

Carol's approach to flying safely is that you need to continue to learn, just as she does in her profession. "I do a lot of continued medical education and read a lot. When I finished my residency there was rudimentary ultrasound, there was no CT (Computed Tomography), no MRIs (Magnetic Resonance Imaging). Since I graduated I had to learn all that. So, that's what so great about learning. My mind continues to grow and expand. You never stop learning.

"Before a flight, several days before, I go through the few 'what ifs' in gas ballooning. For example, what if you're about to hit a power line? The same goes for hot air. In hot air the rule is to fly the gondola under the lines, and rip out the top. In my case," using the last Gordon Bennett as an example, Carol explains that they "were caught on top (above the power lines). In fact, after a flight with Ruth (Ruth Lind is another U.S. world-class gas balloon competitor), the year before this accident, I went through in my mind the 'what if' she had fallen out, and I had been sucked up in a thunderstorm, what would I have done? I would have pulled the top open; the balloon would fold into itself and become a parachute, and thrown everything out of the basket so you can land like in a parachute. I had actually gone through that several times in my mind after the flight with Ruth, but that really wasn't an option with Richard, because I still thought that I could land," she repeats.

"I go through where things are in the basket. In a hot air balloon I do this in my mind while I am driving to the site for a flight. I have flown a long time, and many of these things have happened to me, so I know how to react. 'What if' I had a main blast valve leak? 'What if' I had a tank leak? 'What if' I had a fire on board? I never had a fire on board, but I have had leaks and so, lessons learned! Then, there is the biennual review, so, formally, you go over these things and discuss them with someone else every couple of years.

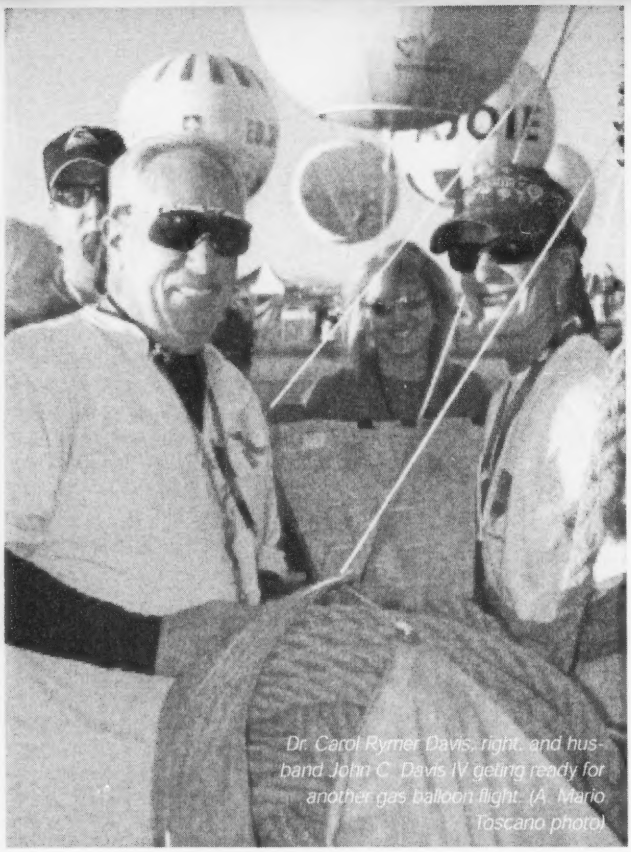
"For safety I always try to read the publications of the gas division of the Balloon Federation of America (BFA) and I read *Skyline's* (a BFA monthly newsletter) learning corner. I learn from my mistakes and others, and go to safety seminars to participate in and talk at them.

"At the end of every gas flight there's kind of a debrief, not only a debrief between you and your flying partner, but also listen to what happened with everybody else. Sometimes there's a general, formal debriefing, and other times is just seeing people if you heard that something happened to them. You talk to them and learn from their experience."

A MENTORING GUIDE

Dr. Carol Rymer Davis recommends that new balloonists start with the books! This is how she would begin mentoring an apprentice. "Know the rules first of all. Someone who does not have a hot air certificate needs to have one," she says firmly.

"We do not interact with Flight Service Stations (FSS) or Air Traffic Control (ATC) in hot air situations, but



Dr. Carol Rymer Davis, right, and husband John C. Davis IV getting ready for another gas balloon flight. (A. Mario Toscano photo)

do it in gas. You need to know the rules and have them fresh in your mind. Then, we go and make several flights. And, if this person has latitude and money is not a factor, we go to Europe and fly there for a week using hydrogen (less expensive in Europe) and fly... fly... fly!!! There's nothing better that can prepare someone for competition. Once you have your certificate just get your feet wet by starting to fly. Meet your goals, and then you compete. And, once you understand what's involved, I would then share my checklist or something very similar," concludes Carol.

"Checklists in ballooning, just like with the rest of general aviation, are essential because you could easily forget something that you need to think about. You plan your food, choose someone compatible to fly with, and then achieve your goals. Of course, make your first goal realistic too."

The FAA's *Balloon Flying Handbook* (FAA-H-8083-11), published in 2001, covers all aspects of balloon flying, hot air and gas, and has several examples of functional checklists. It can be found on the Internet at <www.faa.gov/library/manuals/aircraft/media/faa-h-8083-11.pdf>.

Carol has trained a lot of people along the way. In her experience, she has encountered people who could fly a balloon after a couple of hours of instruction and some who were not comfortable within ten. "So, it's really very personal. Some will find the touch right away, and some never do. If someone came to me and said they wanted to be competitive in gas ballooning I think they'll already have some idea that there's enough literature out there about that such as rules and regulations." She suggests that you accumulate a solid body of knowledge, including flight experience which "means making mistakes and learning from them!"

"For a weekend of hot air ballooning you must also prepare. As far ahead as Wednesday, you start looking at what the weather is going to be like. Obviously, contact the crew. The preparation for a gas flight is weeks, months in advance; whereas hot air is days in advance," she explains.

"Hot air is easy. You set the balloon up, go for a ride. The exposure time in the air for you to get in trouble is much less with the hot air balloon's much easier handling and a quicker process. For gas balloon, just the inflation process, is complex and lengthy."

FLYING PARTNERS COMPATIBILITY:

On selecting a partner, "there's no process that I know of," ponders Carol. "Richard chose me and we had our first flight to see how we would do. Once, I had a flight with a woman that was a disaster...the flight fell apart. Sometimes you don't know how compatible you are until you get into that basket and live with someone for a few days in a stressful situation. You just have to try it out. John and I flew together for a very long time. We do very well, which sometimes does not happen with a husband and wife team, but in our case it did!

"Richard and I, from the last three flights or so, made a point to meet well before a flight, in May or June, and go over what the last flight was about. Review where we felt we have done things right, where we had failed, and just being brutally honest with each other about how we felt about each other, and where we were with our mindset." In their Gordon Bennett 2004 race, which started in Thionville, France, they flew just short of 53 hours for a distance of 1,120 miles going through five hours of rain. The flight over the Baltic lasted 32 hours and 15 minutes, and then into more rain. "When we were ready to land in Sweden, the ground was covered with fog, and it was trying to rain again," Carol says.

"Body, mind and spirit is important not only for myself, but I also think it is important, especially in gas ballooning, to be very much in tune with the person you're flying with...because, the flying it is really so intense. Richard and I don't see much of each other the rest of the year but can just reconnect very quickly because of our shared and our intense experiences. Yes, we talk, but not a lot of chatting. Once you're in a balloon it is all about where you're going and how you're getting there. It's all business."

Carol cites as an example of partner compatibility her 2005 Gordon Bennett defense flight. "When Richard and I both looked and saw the power lines, we both made the decision not to cut the (trail) rope... I mean that (power) line, and getting caught up in it, meant we both would have not been able to get out of there and he might even been thrown out at a higher altitude."

PRESCRIPTION FOR SUCCESS

"I ride my bike to work," says Carol proudly. She rides daily, 30-40 miles round trip, and this year, "with the new light rail system (Denver) I'll be able to extend my bike riding hours because I'll be able to grab the train and won't be riding at night." She's happy!

"Another thing that Richard and I do is to ski. I still ski race and compete in the Rocky Mountain Masters. So it is a year long (with luck) commitment to physical health."

The doctor points out that there was not a great deal of strength involved in the 2005 Gordon Bennett flight ... "but, after Richard fell," she says ironically, "there was the pulling of the sand bags. I was doing several things by myself, getting the basket ready. Of course, when you're in that kind of a situation you find unusual physical strength, I'm sure!

When asked her prescription for a successful balloon flight, she said, "It's body, mind, and spirit! I have a relationship with God, I'm physically fit, and I'm mentally ready to race," she emphasizes with conviction.

"Whatever kind of flying you're doing, be ready mentally, physically, and spiritually to fly. Obviously, not under the influence of any substance or drugs, feeling as rested as you possibly can and be as alert as possible," admonishes Carol.

"You know usually there is never one thing that causes an accident—the downdraft, the thunderstorm, the power line accident, the top not opening—it all rolls up into a big something. So, if you can go into your flight as best prepared as you can be, you only have to deal with the things that are thrown up at you unexpectedly.

A. Mario Toscano photo

IS A CHALLENGING FLIGHT GOOD?

"A boring flight is a very good flight to me. On the other hand, we learn from our mistakes. We learn from what we can do by stretching that envelope a little bit. For example, on the third night of the 2004 Gordon Bennett qualifier (The America's Challenge) we only had five or six bags of ballast left. We asked ourselves, can we do this? That was a pretty tense night for me, but now we know we can! But we didn't know that night over South Dakota. If you had to land, the chances to running into something are small in Kansas or Nebraska. The geography comes into play. Had we been further east, over a mountainous area, I don't know what our decision would have been."

TO BALLOON OR NOT TO BALLOON

"I think that's what everybody was thinking for this year. One of my sisters said we should never fly again, and my family is cautious I think. But, this is who I am," says Carol and explains her logic. "To go through such a freak accident, and then to walk away from something that is so much of our lives, I can't do it! I love being in the air, I love flying! It's part of my life as much as I love riding my bike.... There would be a big hole in my life if I didn't fly!!!

"My immediate family kind of stood back," she explains. In particular her husband, having "flown more hours than I have in all kinds of airplanes ... I believe initially—I haven't asked him—he thought about not flying himself because he was going to be so worried about me. It takes time to digest something like this, the good and the bad. You have to digest a win as much as you have to digest a loss. I mean, we went from first to last! And, that's all part of the mix, of being realistic about who you are, where you're, and what you can and cannot do!"

Carol affirms: "I am very goal oriented. So, even though I achieve something, there's still something more I want to do."

Some people would have second thoughts on getting back into a balloon, after what happened, but not these dedicated balloonists. Carol and Barbara Fricke, another U.S. international gas balloon competitor who lives in Albuquerque, tried to break the women distance and duration record in a balloon last winter. "Between my work schedule and the weather—every three to four days there was a front coming through—it was just impossible to fly across the country this winter. But, we were trying and hopefully will do it! I actually hold the women distance/duration record with Leslie Pritchard. Barbara and I were trying to break that record. I thought that may be this is a good way to get back into a balloon."

Her husband, John Davis, is teaming up with Ruth Lind to compete in the next America's Challenge Gas Race launching on October 7 in Albuquerque.

Richard Abruzzo is scheduled to fly with William (Phil) MacNutt in the 50th Gordon Bennett out of Waasmunster, Belgium, on September 9. "I don't know what will happen if they win. Richard is using his balloon "Doggie," the one we used in Thionville in 2004."

RECOGNITIONS FOR HER ACCOMPLISHMENTS IN BALLOONING

Last December Carol took home the Sabiha Gokcen Medal, the

A. Mario Toscano photo

Above: Partial view of Dr. Carol Rymer Davis' large gallery of trophies and medals. The Sabiha Gokcen is the second from left. Below: Carol poses with Brigadier General A. Bertan Nogaylaroglu, Defense and Air Attache of the Embassy of Turkey, right, and two assistants to the attache, left, when she received the Sabiha Gokcen Medal, last December in Washington, DC.

Dr. Carol Rymer Davis collection photo

Katharine and Marjorie Stinson Award, and, with partner Richard Abruzzo, the prestigious Harmon Aeronaut Trophy for ballooning. The presentation, held in Washington, DC, was the first for the Gokcen medal, named after a pioneer Turkish woman pilot. The Defense and Air Attaché of the Embassy of Turkey, General A. Bertan Nogaylaroglu, bestowed Carol with the prestigious medal. She was nominated by the National Aeronautic Association (NAA) and competed for the award with selected representatives from several countries whose names were submitted to the 'Federation Aeronautique Internationale' (FAI).

"I was greatly honored by the Sabiha Gokcen award. It's huge. Out of the all world, I'm the most significant flyer! What a great honor!

"These are huge awards! I really had no idea coming into the Harmon... There's certainly pleasure and self-satisfaction in receiving these awards, but I don't think I am through quite yet," she proudly says pointing to her gallery of national and international trophies.

What is her next challenge, you ask? Dr. Carol Rymer Davis and Richard Abruzzo are scheduled next for an October flight in the America's Challenge Gas Balloon Race out of Albuquerque, NM as a qualifier for the next Gordon Bennett. We heartily wish them a "non-eventful, long, and boring flight!"

Some of the photos used here are from Dr. Carol Rymer Davis' collection. They were authored and given her by the Kendall, Kansas, Sheriff's Department and the NAA. The author thanks Dr. Carol Rymer Davis and John Davis for all the help, courtesy, and for being charming hosts.

The Ice Man

by Michael Lenz

Heath Wells recounts the icing event that nearly ended tragically for him and two family members. (H. Dean Chamberlain photo)

Editor's Note: The following article is divided into four parts. In the first section, the author interviewed the pilot and recorded his first-person account of an icing encounter that nearly turned fatal. In the second section, he interviewed the Air Traffic personnel involved and presents a behind the scenes look at how they handle this emergency situation. In the third section, an Aviation Safety Counselor reviewed the information and offered his advice to pilots. In the fourth section, the author summarizes the safety messages to help other pilots avoid getting into a similar icing situation.

The Pilot's Account

"Two images will stay with me for the rest of my life," recalls Heath Wells. "One is the 'ping' sound of improperly loaded detonators igniting. These detonators were intended to ignite an improvised explosive device that was part of an enemy ambush that occurred while on one of my two combat tours in Iraq. Had they done their job, I wouldn't have experienced the other image.

"That image is of trees suddenly appearing directly out the front window of the rented *Skyhawk* as I cleared clouds at 1,500 feet above ground level in a 30-40 degree dive.

"This was on the return leg of a Christmas trip on December 26. My passengers were my brother and sister-in-law. We had flown west from the Washington, DC, area to spend time with family in St. Louis during the holidays. This was my first trip with my new instrument rating earned on December 21, 2005—five days earlier. I remember the relief at passing the check ride obtaining the IFR rating and thinking now I could complete the Christmas trip without any worries. I was in for a big surprise!

"I had received both a DUATs and Automated Flight Service Station (AFSS) briefing on the morning of the return trip from the St. Louis area. There were PIREPs for icing with a cold front oriented north and south in central Pennsylvania. This was expected to move east during the day. We departed from St. Louis' Creve Coeur airport for Columbus, Indiana, and experienced some light icing on climbout, but it sublimated after climbing through about a 1,000 foot cloud layer, and we flew in VFR conditions on top.

"During the fuel stop in Columbus, I checked the weather from the fixed base operator's weather terminal. I expected to be able to continue on top with marginal VFR conditions in the Bedford, Pennsylvania, area. We would then make our decision regarding whether or not to continue to our destination of Harrisburg, Pennsylvania, which would hopefully have seen the cold front pass by then.

"I didn't know the front had stalled, and the clouds and moisture lay right over the area where I was about to attempt an approach into Bedford. I had to keep requesting higher altitudes, from 7,000 to 9,000 feet, as I

"75L, I have the airport in sight (2G9), Oh, man, this thing is covered in snow." So, the pilot chose to cross the ridgeline to Altoona (AOO) narrowly missing peaks and towers.

was approaching Bedford to stay VFR on top. Temperatures at 9,000 feet were slightly below freezing and as I was cleared for the initial approach altitude I hoped to descend into warmer air.

"As I descended, the aircraft accumulated ice in hard IFR conditions. The wing struts were barely visible. As I attempted to level out at the assigned altitude of 4,500 feet, I realized I couldn't hold the altitude and stay above stall speed. I kept descending trying to maintain airspeed, and I was able to maintain about 4,000 feet for a couple minutes as I confessed my situation to the controller.

"Then I watched the attitude and heading indicator spin as the aircraft rolled! I immediately remembered my unusual attitude recovery techniques and reduced power and looked at the turn coordinator to get the aircraft right side up. After breaking out of clouds and seeing the trees, I elected to proceed to Bedford with the help of the aircraft's GPS.

"I declared an emergency—this got me the controller's undivided attention and we were now discussing minimum terrain elevations instead of minimum instrument altitudes.

"I didn't have the luxury of executing an instrument approach now. The aircraft's performance was severely limited and I wasn't sure how much longer I could even continue flying. The airspeed was gone even though the pitot heat had been on. I was limping along in marginal VFR conditions, with turbulence and no airspeed to spare.

"The GPS showed the Somerset Airport about six miles directly behind me, and with my airspeed indicator gone and my altitude and ideas beginning to run out, I figured a landing at Somerset might get this nightmare to end.

"Somerset had snow-covered runways and a crosswind that exceeded my and the aircraft's crosswind capability. I made a low approach, down to about 200 feet and didn't like what I saw. I had the rudder in all the way and was still not able to hold the centerline. Several of the runway edge lights were buried in drifting snow. There was strong turbulence, too. I thought this may be my only option, even if it meant sliding off a slippery runway. The airport looked quiet, almost abandoned, and I wondered if anyone would be available to help us, because I knew some aircraft damage and even injuries might occur on landing. I decided to go-around.

"The controller and I started discussing other options, one of which

was Johnstown, Pennsylvania. Johnstown was nearby, but had a very low ceiling and only a half mile visibility. I asked for "anything better" when a commuter pilot indicated that Altoona was not bad with good visibility and winds right down the runway. I said, 'I'll take it!'

"This meant limping over a ridgeline where I saw the hills disappear into the clouds. The words of the my IFR designated examiner were echoing in my ears as he pointed out obtaining an instrument rating brought the risk of a controlled flight into terrain (CFIT) accident. I would have to climb back into the icy clouds to get over the hills.

"As I did, the controller pointed out obstructions relative to my position. The elevations he was reading were close to my altitude. All I could do was press on and hope I cleared the terrain and obstacles. An occasional glimpse of the ground was helpful.

"With the GPS counting down the miles to Altoona, I was within two miles of it and still didn't have it in sight. I was once again trading altitude for speed, listening to the sound of the propeller to judge airspeed. I wondered what was next if I couldn't see it. Did I have any other options? Then, there it was! It was a beautiful sight!

"I completed the landing to runway 30. I didn't extend the flaps thinking I didn't need any more drag. This turned out to be a key to safely completing the flight as I learned later that flap extension can change the airflow over the horizontal stabilizer and elevator and cause them to stall. A stalled tail will cause the aircraft to nose down, with little chance for recovery.

"I learned a lot that day—too much in fact. I'll be a better pilot for it, but I realize there is still much to learn.

"The one thing I know I am never going to do again, at least not without a copilot and known de-icing equipment, is proceed into thickening clouds, when the temps are near freezing. With more experience I would have known the right decision would have been to divert and ponder the weather from the safety of an airport snack bar over hot chocolate.

"I'm still flying, and I enjoy it, but I'm not ready to give my life for it. I hope this is the only time my name appears in the FAA statistics."

Behind the ATC Scenes

If you even wondered what goes on behind the scenes in such an event, here's a look as told by the people involved.

On duty that day at Cleveland Air Route Traffic Control Center (ARTCC) was Terry Pitts. Terry has 21 years of experience, all at Cleveland ARTCC and all in the geographic airspace known as Area 5, where this event occurred. Area 5 contains four low altitude sectors with a number of non-towered airports with instrument approach procedures. Controllers in Area 5 are experienced at working aircraft all the way to landing. This is probably the exception in many ARTCC's, but it was very valuable in this event.

Terry had worked other icing events before, but none like this. When pilots had requested assistance with ice, Terry's experience had been to get them to improving weather, or even VFR, and they landed uneventfully. Terry recalled one icing encounter, about 15 years ago, that he observed while another controller was working the aircraft. This ended in a fatality to a high-time pilot, the sole occupant. That case involved a piston twin, and Terry watched the sudden loss of control. "I was amazed at how quickly it happened, and I never forgot it."

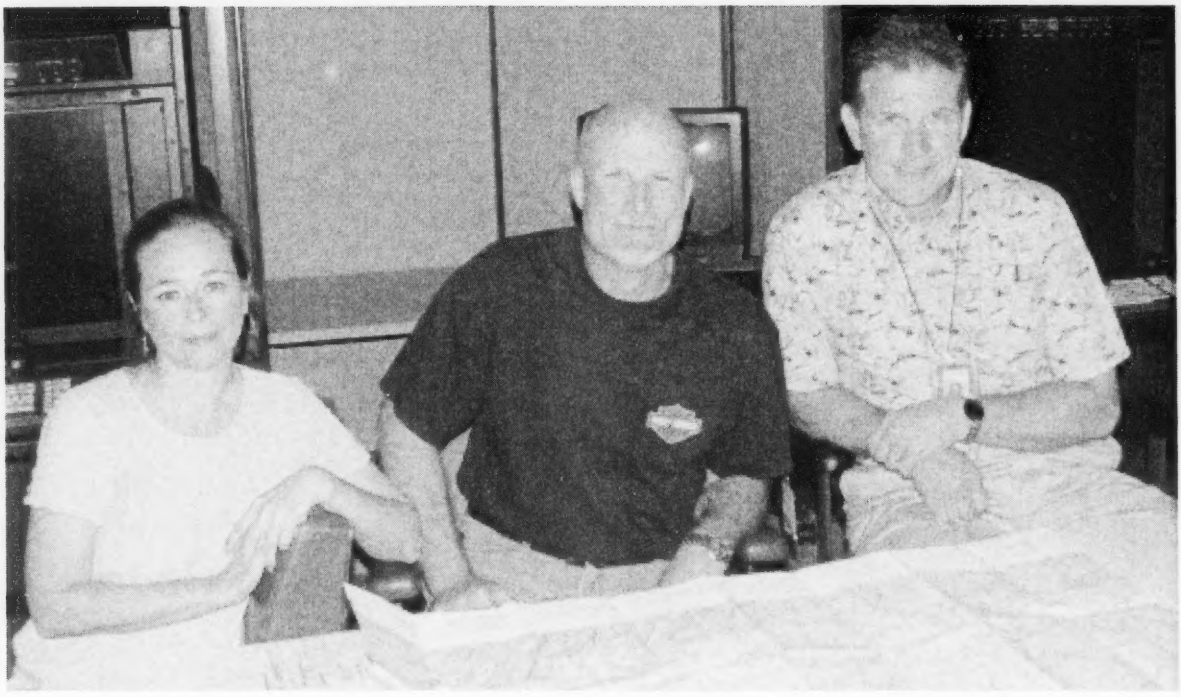
"This case was very different," Terry reports. "We had been a bit concerned about the airplane from the beginning as he had difficulty holding altitude—at first going above the assigned altitude. That altitude of 7,000 feet was for separation with arriving Pittsburgh traffic, and there had been reports of turbulence over the ridgelines, so we thought the altitude excursions were linked to updrafts. When the pilot said he needed higher altitudes to stay on top of the clouds and out of ice, I immediately granted his requests—each time having to stop descending traffic to keep them clear of the Cessna. This is opposite the way it should be done. Usually, the potential conflict with a descending aircraft has to be resolved before allowing a climb, in case radio communication would be lost. I thought the chances of that were small, compared to the problems of a *Skyhawk* accumulating ice.

"Things turned from concern to a full emergency as the Cessna was descended to 4,500 feet, the minimum instrument altitude, and cleared for the GPS Runway 32 approach into Bedford. I knew time was critical when the pilot reported being unable to maintain altitude. "My ability to help would be based on keeping the aircraft in radar contact. Radar contact is based on line-of-sight coverage between the aircraft and the radar transmitter. In mountainous terrain, it's common to lose coverage at lower altitudes. I tried to get the pilot to climb to the minimum instrument altitude, but that wasn't going to happen and, for the most part, radar contact was lost."

Terry declared an emergency to his supervisor, Mike Wilson, shortly before the pilot did. Mike, a CFI, joined Terry at the scope. Stacey Parham, the radar associate controller at the position with Terry, also started getting information on weather and conditions at nearby airports.

As the pilot tried to continue under the clouds to his original destination of Bedford, he was near and at times below the minimum elevation figures as shown on the sectional charts. Then when the pilot saw the Somerset airport on his GPS, a landing was attempted there. The crosswind and snow-covered runways precluded this.

Terry watched each update of his radar display for the *Skyhawk*. An occasional radar position was what Terry needed to keep the pilot advised of terrain and obstacles. Controllers at Cleveland Center have sectional charts above their control positions, and Terry kept referring to the chart



Cleveland Air Route Traffic Control Center Controller Terry Pitts, center, with radar assistant Stacey Parham, left, and supervisor Mike Wilson at right. (Cleveland ARTCC photo)

for terrain and obstacles. Mike Wilson saw that it was difficult for Terry to keep looking up at the chart mounted above the scope, so he removed a sectional from another display that was not being used and set it in front of Terry.

Other controllers, who were available, were helping out too. The instrument approach charts for the area were being reviewed for minimum safe altitudes. As these controllers learned a key point that could offer assistance, they would quickly write a note and hand it to Terry. Stacey had quickly pulled together the information on weather and conditions at nearby airports and had that ready for Terry also.

After the pilot's unsuccessful attempt to land at Somerset, Terry provided information on Johnstown, which was the closest airport. Weather there consisted of a 300 foot ceiling with only a half mile visibility. But Johnstown had an airport traffic control tower.

When the Cessna pilot heard a commuter pilot report the conditions at Altoona, which were significantly better than Johnstown, he decided to go for it. There was a ridgeline between the Cessna and Altoona. Now it became a dicey and potentially deadly game as the Cessna was able to maintain roughly the same altitude as the ridgeline and towers. Terry described the terrain and obstructions based on last known positions from the increasingly scarce radar hits. Without good radar contact, Terry felt somewhat helpless, his eyes riveted on the scope, awaiting the occasional appearance of the *Skyhawk*. Mike, Stacey, and the other controllers watched intently, providing help where they could.

The pilot finally reported Altoona Airport in sight. They suggested runway 30 would be best for the winds. Then they waited as he attempted the landing. It was a long wait, but finally Altoona AFSS called indicating the pilot, passengers, and aircraft were down and safe.

Terry received an Outstanding Flight Assist award for his work this day. He's also thinking about retiring next year. Before he does, his experience can hopefully be passed along to those who will take his place. Whether you're a pilot or a controller, there is no substitute for experience.

To hear the Pilot/ATC transcripts of this event and learn more, go to <www.asf.org/iceman>.

An Aviation Safety Counselor's Review

Walt Echwald is an Aviation Safety Counselor from the Washington Dulles Flight Standards District Office (FSDO), who listened to the ATC communications on this event and also talked with the controllers involved. From his experience, he offers the following observations, which apply to new instrument pilots and all winter operations.

- The FAA has published some excellent manuals on weather and instrument operations. These are well worth the time to review be-

fore the seasons change and we shift into winter mode.

- Always preflight the pitot static heating system before launching. It is a simple thing and pilots should always determine if it's operational. If not, postpone the flight until it's working.
- Too many pilots rely on ATC to get them out of a bad situation. This pilot should have established two alternates in the event conditions change. They change more in the winter. Knowing this, and how to handle it, is something that comes with experience.
- The situation he was faced with before takeoff called for a thorough analysis of the weather. Updating the weather from AFSS while en route might have avoided this situation. The pilot could have learned of the conditions well ahead of time and diverted to an airport clear of the icing conditions.
- As far as I am concerned I would not have flown my airplane (a PA-30 *Twin Comanche*) in that weather with the risk of icing.
- The controller did his job well by getting the aircraft down safely in Altoona. But the pilot had limited options at that point and in some respects was along for the ride. Before take-off he should have planned for weather options, so that he would have known where he could go if conditions deteriorated and he had to divert and land.
- The best advice I could give this gentleman is to find a flight instructor with considerable experience in winter and tight IFR weather. Then fly with him on an actual instrument cross-country trip. He will then understand what it takes to be in command and fly safely.

Summary

This icing article and counselor's comment is offered now, while much of the country is enjoying late summer and early fall weather, because we know what's coming...ice!

The safety message goes beyond just an icing encounter. The pilot involved had recently obtained his instrument rating and this event points out the hazards of inexperience. Fortunately, this ended safely; however, each year there are accidents occurring to pilots who have newly acquired private pilot certificates or instrument ratings. These accidents can be attributed to the pilots encountering conditions for which they have theoretical knowledge, but little or no practical experience to manage.

As you'll see, the safe outcome was likely due to a combination of things. The pilot is bright, competent, disciplined, and well-trained. The controllers working the flight were highly experienced.

It gives us something to think about regarding how experience with icy winter clouds can be safely acquired while remaining legal and, above all, safe. Flight into known icing conditions without certified de-icing equipment is contrary to the regulations. Even with certified equipment, skillful pilots have an "out" planned, should the de-icing equipment not be adequate for the conditions.

The instrument flight training provides basic preparation for IFR flights, but the rating enables pilots to undertake flights in conditions that they are probably going to experience for the first time. This could even include actual instrument meteorological conditions or IMC. New IFR pilots find that flying in IMC is quite a bit different than practicing under the hood or using a simulator. There is a basic disconnect here—just when the pilot needs an instructor most, there isn't one in the seat next to him or her. This can be remedied by taking an instructor along on the challenging cross-country flights a new instrument pilot plans to make. A plan to ramp-up experience and acquire more training related to the way you plan to fly is the key. This can be tailored to the unique weather challenges posed in your part of the country.

Steve Wallace, FAA's Director of the Office of Accident Investigation, put this best, when he quoted his father's response to hearing the news of Steve having obtained his instrument rating. His father, a Pan Am pilot, said, "That's great, son. Now, don't use it!" This icing encounter in Pennsylvania shows what he meant by that. The experience to get the safety and benefit of an instrument rating has to gained carefully. Steve did just that. He took the comment "Don't use it" to mean *ease* into it, or ramp-up your instrument flying experience safely. Steve recalled, "I was in Seattle, which had a lot of days with 1,000 foot overcast, tops at 3,500, decent visibility and no issues of ice or convective nasty stuff. Good stable Puget Sound weather. I considered those to be flyable single-engine IFR days. Anyway, what I did mostly was file and fly IFR in VFR conditions all the time, and punch through the overcast once in a while. In doing so, I was setting my own minimums."

You can ramp up your experience level safely by always leaving yourself an "out." This applies in ice, thunderstorms, or the challenge that low ceilings and visibility conditions present when alternate airports are few and far between.

After this encounter, the pilot agreed to some additional training in winter operations. He said there is no training, however, that could reinforce the lessons learned, and leave an impression equal to seeing the trees and ridges in southwestern Pennsylvania looming large out the front window of the Cessna as he was attempting to regain aircraft control. He realizes he's lucky to have a second chance to continue flying.

Readers have a chance to use the information in this article to manage the risks they face and safely acquire experience instead of pushing the limits nearly to the breaking point. There is no substitute for experience. The key is to gain that experience safely—while leaving yourself an "out."

Michael Lenz is a Program Analyst in Flight Standards Service's General Aviation and Commercial Division.

Iced Tea and Other Cold Drinks

by Harlan Gray Sparrow III

Let's face it. The only time we aviators want to see ice is in a cold drink and not on our aircraft. So why would any sane aviator depart knowing that icing conditions were forecast to be present along his/her route of flight? Except for pilot reports, icing conditions are always forecast, which means the conditions for the formation of ice on my aircraft may be present along my route of flight. To go or not to go! The truth is that there are many times those ice forecasts are in our weather briefings and yet we never see any ice during our flight. So why worry? Well, it only takes one good coat of ice on your aircraft to make a believer out of you. I decided that since summer is almost over I should start reviewing the latest information available on icing. Okay, maybe I'm a bit early, but as I found out there is a lot of "stuff" to read. After a bit of Web searching I came up with a few U.S. Government Web sites that seemed to have the most current information. There are even a couple of interesting online courses. Check out these Web sites for yourself.

As we are the FAA, let's discuss those sites first. This first one is probably the best overall site in the bunch. In the General Aviation Pilot's Guide to Preflight Weather Planning, Weather Self-Briefings, and Weather Decision Making, each section is based on what the pilot really needs to know in order to properly evaluate the weather for the upcoming flight. There are references for additional Web sites that take the reader directly to the charts, weather maps, and many other planning resources. Appendix 6 has a very nice "Weather Analysis Checklist." The Web site address is: <http://www.faa.gov/pilots/safety/media/ga_weather_decision_making.pdf>.

"Welcome to PilotWeb" is one stop shopping. It has access to Notice to Airmen (NOTAM) and "Weather" sites, not to mention a very extensive list of "Tools" and "Links." It's a great place to get an overall view of numerous sources. The Web site address is: <https://pilotweb.nas.faa.gov/distribution/atcscc.html>.

This next site needs practically no introduction. This Web site is the electronic version of the printed NOTAM publication. The nice part is an easy access, without some of the fluff and diversions. Current NOTAMs are available from Flight Service Stations at 1-800-WX-BRIEF. The Web site address is: <http://www.faa.gov/NTAP/>.

When you think of weather, the National Weather Service comes to mind as a primary source of information. Here are some of the Web sites it has to offer.

The really nice part of the Aviation Digital Data Service (ADDS) Web site is the pilot reports that are available with great pictorial views of current icing advisories. Its Web site address is: <http://adds.aviationweather.gov/icing/>.

This following Web site features a chart for checking out the "Current Icing Potential" (CIP) overview. Since most aviators like pictures, this is another good one to review. The Web site address is: <http://aviationweather.gov/exp/cip/>.

These are just a sampling of the available sources for preplanning your trip. Also available for checking out online are free courses, manuals, and advisory circulars (AC) that can provide you with more information.

The National Aeronautics and Space Administration (NASA) provides pilots with a useful training tool. The two courses on aircraft icing offered on this site are great. Most questions about ground icing and in-flight icing should be answered. Enjoy! The Web site address is: <http://aircrafticing.grc.nasa.gov/courses.html>.

The FAA Safety Program Online Resources offers a variety of information and accompanying links for further guidance. The Web site address is: <http://www.faasafety.gov/onlineresources.aspx?masterId=1>.

The FAA offers a "Safety Alert for Operators" (SAFO) that just came out in March, primarily because of the recent accidents involving ice. This Alert has a number of Web sites imbedded within the document. After reading this, aviators should have no doubt about how much ice on the aircraft is acceptable before takeoff. How about none! The Web site address is: <http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo/all_safos/media/2006/safo06002.pdf>.

The *Aeronautical Information Manual* (AIM) is one of my favorite sources of information. In Chapter 7, "Safety of Flight," paragraphs 7-1-22 and 7-1-23 address "PIREPs Relating to Airframe Icing." They also give one of the best descriptions of how to define "Icing Types." Check it out for yourself. When reporting ice to ATC, the definitions in paragraphs 7-1-22 and 7-1-23 are the ones you are suppose to use when making the report. The Web site address is: <http://www.faa.gov/ATpubs/AIM/>.

This next source is the *Instrument Flying Handbook*, which gives the pilot information that isn't cluttered with unnecessary verbiage. "Just the Facts" is what the reader gets on pages 10-23 and 10-24. This provides a clear definition of icing and what to expect in certain conditions. The Web site address is: <http://www.faa.gov/library/manuals/aviation/instrument_flying_handbook/>.

The *Pilot's Handbook of Aeronautical Knowledge* is another wonderful source of information in plain language. Chapter 11, entitled "Weather Reports, Forecasts, and Charts," is insightful and comprehensive. The Web site address is: <http://www.faa.gov/library/manuals/aviation/pilot_handbook/>.

An advisory circular that is available is AC 91-74, *Pilot Guide: Flight in Icing Conditions*. The purpose of this AC is to provide pilots with a convenient reference on the principal factors related to flight in icing conditions and the location of additional information in related publications. Its Web address

is: <http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/4F211DD2F5233B5686256C9B0056F7A0?OpenDocument&Highlight=91-74 >.

Last, but certainly not the least is *Aviation Weather*. AC 00-6A started in 1943 as CAA Bulletin No. 25, *Meteorology for Pilots*. I have been following the changes and updates to this publication for over thirty-five years. It continues to be a great source for basic weather information for pilots. Pages 91 through 102 are informative about icing and its effects on our aircraft. The Web site address is:

<http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/C2DF8D9D7471617786256A020078083A?OpenDocument>.

There is an excellent video tape on icing that was produced by Mitsubishi during the testing of the MU-2 series of aircraft. Be sure to watch it at one of the MU-2 Prop Seminars that are held in many cities throughout the US. For Prop seminar information and schedule, the Web site address is: <http://www.turbineair.com/>.

The next thought will summarize, and focus, on the preparation that can save lives. Good flight planning will not always prevent you from getting into icing conditions at some time during your career, but at least you will be better prepared and trained for the best possible courses of action. To know what you will do, before the situation presents itself, is key. Plan those moments out painstakingly.

The phrase "knowledge is power" comes to mind. This is applicable only if the knowledge is put to practical use. Check out these sources and make them favorites on your Web site list. Building a resource Web site list can only enhance and enrich your future aeronautical studies.

I wonder if getting a load of ice on your aircraft qualifies you for a T shirt saying "I got Iced."

Harlan Gray Sparrow III is an Aviation Safety Inspector with Flight Standards Service's Air Transportation Division.

Web Addresses for Icing Information

FAA Web Sites

General Aviation Pilot's Guide to Preflight Weather Planning, Weather Self-Briefings, and Weather Decision Making
<http://www.faa.gov/pilots/safety/media/ga_weather_decision_making.pdf>

Welcome to PilotWeb
<https://pilotweb.nas.faa.gov/distribution/atcscc.html>

Notice to Airmen (NOTAM)
Domestic/International
<http://www.faa.gov/NTAP/>

Safety Alert for Operators (SAFO)
<http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo/all_safos/media/2006/safo06002.pdf>

FAA-Safety Program-Online Resources
<http://www.faasafety.gov/onlineresources.aspx?masterId=1>

Aeronautical Information Manual (AIM)
Chapter 7, Safety of Flight, paragraphs 7-1-22 and 7-1-23
<http://www.faa.gov/ATpubs/AIM/>

Instrument Flying Handbook (FAA-H-8083-15)
Pages 10-23 and 10-24
<http://www.faa.gov/library/manuals/aviation/instrument_flying_handbook/>

Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25)
Pages 11-1 thru 11-19
<http://www.faa.gov/library/manuals/aviation/pilot_handbook/>

Aviation Weather, AC 00-6A
Pages 91 thru 102
<http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/C2DF8D9D7471617786256A020078083A?OpenDocument>

Pilot Guide: Flight in Icing Conditions, AC 91-74
<http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/4F211DD2F5233B5686256C9B0056F7A0?OpenDocument&Highlight=91-74 >

National Oceanic and Atmospheric Administration/National Weather Service Web Sites

Aviation Weather Center
Aviation Digital Data Service (ADDS)
http://adds.aviationweather.gov/icing/

Aviation Weather Center
Current Icing Potential (CIP)
<http://aviationweather.gov/exp/cip/>

National Aeronautics and Space Administration Web Site

Aircraft Icing online courses
<http://aircrafticing.grc.nasa.gov/courses.html>

Is Your Aircraft Winterized?

by H. Dean Chamberlain

Other articles in this issue discuss the impact and risks of winter flight operations. This article provides a quick overview of some tips on how to prepare your aircraft for winter flight operations. Although not all inclusive, this article is designed to remind everyone flying in winter conditions or planning on flying to areas of the country with winter conditions of the need to properly winterize your aircraft. Conversely, if you fly from cold winter conditions to milder conditions, you may need to service your aircraft for the warmer conditions. Finally, if you don't plan on operating your aircraft as frequently as you did during the summer months, you may want to review your aircraft's storage or flyable storage servicing recommendations as appropriate.

The first step in winterizing your aircraft is to review your aircraft's flight manual or pilot operating handbook. If your aircraft is very old, its documentation may not contain as much information as newer aircraft, but it is a starting point. How you winterize your aircraft depends upon its construction. For example, since most general aviation aircraft engines are air cooled, basic engine care may be limited to using the appropriate grade of oil based upon the expected temperature range. Some aircraft may require installation of an air-inlet restrictor plate to reduce the amount of cold air flowing through the engine and/or oil cooler. If your aircraft has control cables rather than push-pull control tubes, you may need to adjust your cables to compensate for contraction due to the cold temperatures.

In reviewing a selection of aircraft operating manuals, the use of aircraft preheat was recommended based upon outside air temperature. Although most people think about preheating the engine compartment, preheating the cockpit reduces the wear on gyros and other temperature sensitive components.

As in any type of aircraft operation, the aircraft manufacturer's guidance outlines the procedures to be followed. In case the published guidance does not answer a particular question you might have, your trusted aircraft maintenance technician should be able to provide the correct answer. Aircraft manufacturer's service bulletins and FAA advisory circulars are also good sources of general winter service information.

The following is a list of some of the more common items to check depending upon type and complexity of aircraft involved.

Air filter checked
Aircraft heater (furnace) inspected
Aircraft washed and wax as appropriate
Alternator and drive belt checked
Anti-icing system checked

Battery system checked
Belts and hoses checked
Brakes checked

Carbon Monoxide detector checked/new installed
Control cable tension adjusted
Correct grade of engine oil installed
Correct grade of lubricants and grease

Deicing system checked

Flashlight and batteries checked
Fuel additives as required
Fuel strainer checked

Heater shroud/exhaust inspection for no leaks

No water in the fuel system

Oil dilution system checked
Oil filter checked
Oxygen cylinder checked for correct pressure

Pitot system checked
Propeller checked
Propeller deicing system checked

Shimmy damper checked
Shock struts checked
Survival gear as appropriate checked

Tire pressure checked

Windows cleaned and checked for cracks
Windshield anti-ice system checked
Winterization kit installed as appropriate

FROM THE LOGBOOK: UNDERSTAND YOUR BRIEFING?

Have You Spoken With The New AFSS? (Flight Service)

by ©Jim Trusty 2006

When I say "New," I mean new owners, new equipment, better response time, same old building, same personnel, and same reliable service. Lockheed Martin took over as operator and management team in October 2005, everywhere in the United States except Alaska (I'll bet someone told them about that state and the risks of flying there), and some changes are on the horizon. I understand that even newer equipment will be introduced in 2007 to replace the OASIS [Operational and Supportability Implementation System] units they are now using. I also understand that they are going to spring for some new buildings. I want them to put windows in so that the operators can see if what they are predicting actually matches what's happening. Ever experienced passing through a clear report and your aircraft getting wet?

If you haven't visited lately, you can get a guided tour if you call ahead. I did and I took it. I have spent many a year at BNA (Nashville) and took every student with me to Flight Service. That really works well if you can introduce them to the person behind the voice. It makes flying out of Class "C" a lot easier. I can remember when they were the only game in town and they did a lot more than tell you about the weather. If you have ever been lost and then found by AFSS, you remember them very kindly. I certainly do! I'm really telling my age and how long I have been a pilot when I mention a DF Steer.

On my latest trip the briefer sat me down and we talked about OASIS. He showed me an airplane on a flight plan between two points and then showed me how they can pull up en route information for the pilot, like nearby airports, fuel, and of course weather! What an upgrade this is for the pilot who might need just a little assist on the flight and for the Flight Service Specialist who has the information right at hand and on the screen.

The tour covered everything that an instructor could ask for and answered all the questions that even the newest student might have. I relayed to him [my guide] the reason I brought everyone by when they started flying out of Nashville. I had a student transfer in from a small airport somewhere and asked him to call AFSS and get us a briefing to see if we could go. I watched, he listened and wrote, said "thank you" and hung up. I asked about the weather and he said, "It's okay." I asked to see what he had written and it read, "Scattered, covered, smothered, chunked, topped, diced, and peppered." He said that's what it sounded like to him. He must have been a Waffle House customer in the past.

This was his first call to AFSS and with that report, he won a trip to visit. I still see this guy. He flies out of an adjoining airport and understands every word that a briefer says when he calls or visits. That visit, or even one today, can make you a more informed pilot and information is what keeps us safe and alive. I hope you agree.

I really like this service. Being a Corporate 135 Pilot myself, I know that there are a lot of other services out there at present to file, get weather briefings, and everything else that a Flight Service Station does; but I prefer the original. I like to see the people, look at the machine myself, ask a few questions, and then get their number so that I can call them back and give a pilot report to help those in my wake. I think that gradually the others, trying to make a living on the fringe of a free service, will fold and move on to something else. Especially when they see that Lockheed Martin is really trying to do what the business was designed to do and that is to help the aviation industry and community.

You can still call them wherever you land and take off at 1-800-WX-BRIEF or stop by at your convenience and get your information in person. They are still available in the air on several different channels. Check the *Airport/Facility Directory* for your area and look forward to Internet access, which is now in the planning stages for sometime in 2007.

I think they are going to get even better under this new team after making some adjustments in equipment and personnel. New personnel are in training in Arizona, new equipment is on the way for 2007, and the job of helping us fly safer is getting done. What more can we ask? Call your local AFSS as soon as you read this article and tell them that I told you they were open for business and willing to do group tours—with a phone call and a little notice! DO NOT give them my correct name, e-mail address, or phone number.

It felt good to be back in familiar surroundings at the FSS building on the airport, and as I looked out the window at the BNA ATCT I thought to myself, we will eventually get back in there, too. The horror of 9/11 can't linger forever. This nation has proven in the past that we can overcome any adversity and come out as the winners. I look forward to and dream about everything being back to normal again.

My thanks to Carl Anderson, Operations Manager at the Nashville AFSS, for answering a lot of questions and helping me to understand the transition.

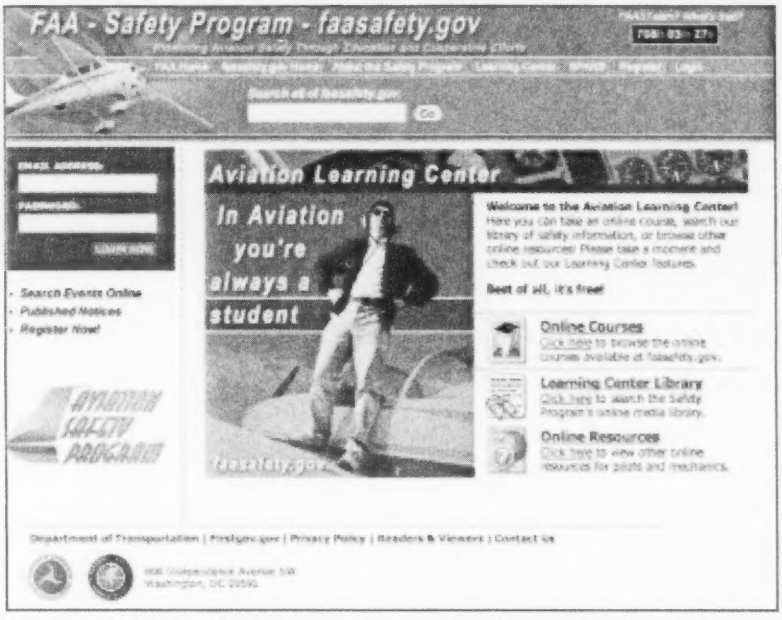
James E. (Jim) Trusty is an ATP, CFI, IGI, and an Aviation Safety Counsellor. If you have comments please e-mail them directly to him at <Lrn2Fly@bellsouth.net>. *Written permission from the author required to reprint this copyrighted article (2006).*

Courses, Sources, and Resources

by Susan Parson

For many people, one of aviation's greatest benefits is the ability to explore new places. However, aviation learning and exploring doesn't need to stop when you're ground-bound, though. Next time you are navigating cyberspace instead of airspace, type <www.faasafety.gov> into your favorite browser to go direct to a new and growing aviation safety resource: the FAA's online Aviation Learning Center (ALC).

One of the three major parts of the <www.faasafety.gov> Web application, the ALC is intended to serve the aviation community as a safety learning resource offering relevant, timely, and high-quality safety content to pilots and aviation maintenance technicians (AMTs). It is also intended to provide a portal to valuable aviation safety information located elsewhere in cyberspace. Let's take a tour!



Online Courses

The purpose of the ALC's Online Courses section is to offer airmen a convenient, informative, and interesting means of continuing aviation education on a wide range of safety topics. So whenever weather or other circumstances conspire to keep you from setting a course in your aircraft, try taking a course in the ALC's Online Course catalog.

When you click the link to the Online Courses catalog, you'll see a list of course categories that cover both specific subjects, like weather, and specific audiences, such as pilots or AMTs. As you will see when we tour other parts of the ALC, category names in the Online Courses section are designed to match those in the Learning Center Library and the Online Resources, making it easier for you to find what you need.

If you're looking for flash, you won't find it here: ALC Online Courses are intended to be meaty "steak-and-potatoes" offerings that are quick to download, easy to complete, and full of useful information. A "related media" feature allows course designers to create a complete content package for ALC online course users, such as copies of relevant advisory circulars and links to other material. The goal is to populate the Online Courses catalog with courses on a number of subjects, and to offer not only full-length courses that take one hour or more to complete, but also mini-courses that can be completed in 15-30 minutes. The four existing courses illustrate these features:

The Art of Aeronautical Decision-Making includes detailed scenarios designed to stimulate thinking about situations that, just as in "real-world flying," do not necessarily lead to a clear "go" or "no go" decision. The exam for this course is primarily based on the flight scenarios.

The Flight Review Prep Guide offers a structured and thorough review of the Part 91 and *Aeronautical Information Manual* (AIM) material you need to study in preparation for the ground portion of your flight review. The related media sections for this course include Advisory Circulars (ACs), links to appropriate sections of the AIM, PowerPoint® presentations, and other supporting material. Exam questions are structured as mini-scenarios that may require you to correlate information from different regulations and AIM sections.

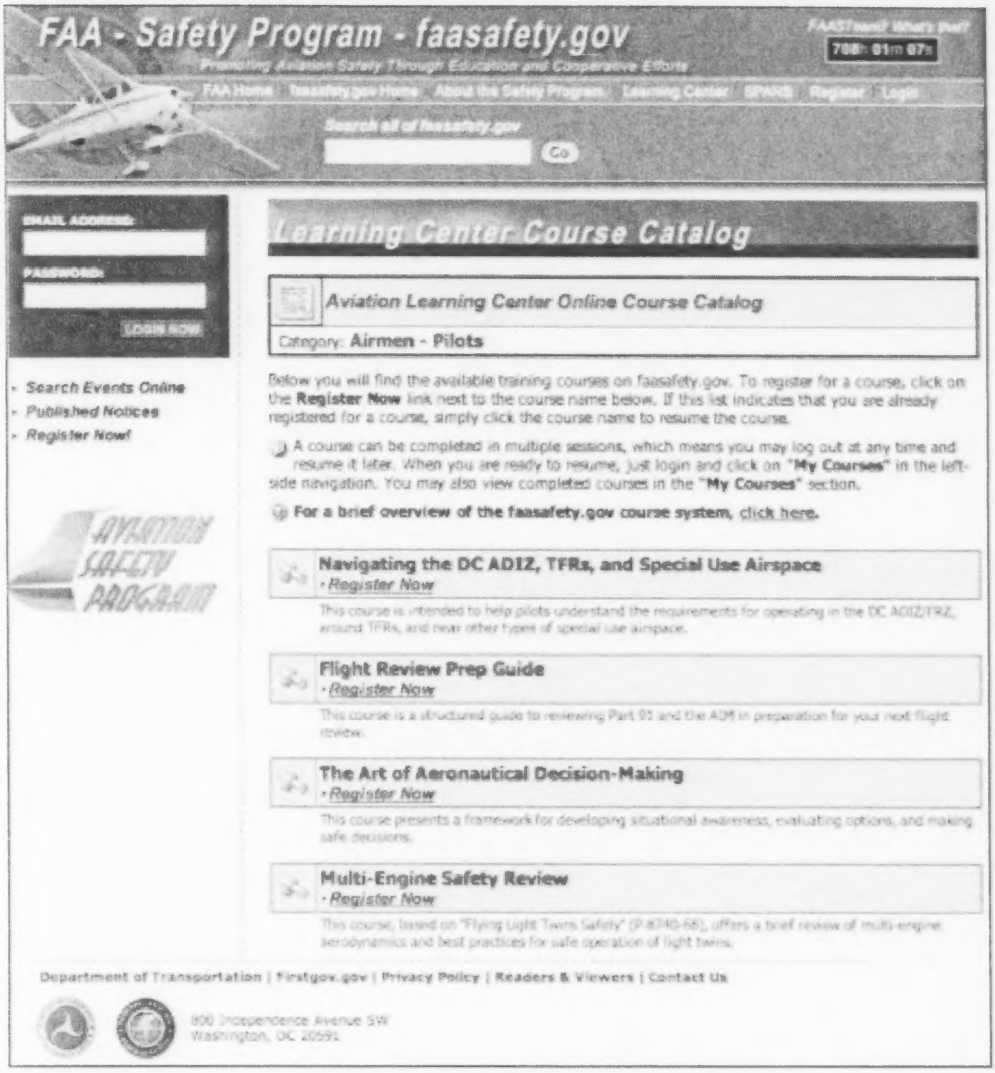
Based on the *FAA's Flying Light Twins Safely* "P-Pamphlet," the Multi-Engine Safety Review course is intended to provide a quick (15-20 minute) review of basic multi-engine control and performance concepts. The related media for this course includes the Multi-Engine Transition chapter of the FAA's *Airplane Flying Handbook*.

The *Navigating the DC ADIZ, TFRs, and Special Use Airspace* course offers practical information on requirements and procedures for operating in the Washington DC Metro-

politan Air Defense Identification Zone (DC ADIZ), the Washington DC Metropolitan Area Flight Restricted Zone (DC FRZ); security-based temporary flight restrictions (TFRs); and other types of special use airspace. This course includes downloadable DC ADIZ procedures guides sized to fit your kneeboard.

All courses in the ALC include downloadable course notes, and all are eligible for credit in the FAA's Pilot Proficiency Awards (WINGS) program.

More courses are in the works, so check back often to see what's new.


FAA - Safety Program - faasafety.gov
Promoting Aviation Safety Through Education and Cooperative Efforts
FAA Home | faasafety.gov Home | About the Safety Program | Learning Center | SPANS | Register | Login
Search all of faasafety.gov
Go
EMAIL ADDRESS:
PASSWORD:
LOGIN NOW
Search Events Online
Published Notices
Register Now!
Learning Center Course Catalog
Aviation Learning Center Online Course Catalog
Category: Airmen - Pilots
Below you will find the available training courses on faasafety.gov. To register for a course, click on the Register Now link next to the course name below. If this list indicates that you are already registered for a course, simply click the course name to resume the course.
A course can be completed in multiple sessions, which means you may log out at any time and resume it later. When you are ready to resume, just login and click on "My Courses" in the left-side navigation. You may also view completed courses in the "My Courses" section.
For a brief overview of the faasafety.gov course system, click here.
Navigating the DC ADIZ, TFRs, and Special Use Airspace
Register Now
This course is intended to help pilots understand the requirements for operating in the DC ADIZ/FRZ, around TFRs, and near other types of special use airspace.
Flight Review Prep Guide
Register Now
This course is a structured guide to reviewing Part 91 and the AIM in preparation for your next flight review.
The Art of Aeronautical Decision-Making
Register Now
This course presents a framework for developing situational awareness, evaluating options, and making safe decisions.
Multi-Engine Safety Review
Register Now
This course, based on "Flying Light Twins Safely" (P-8740-66), offers a brief review of multi-engine aerodynamics and best practices for safe operation of light twins.
Department of Transportation | Firstgov.gov | Privacy Policy | Readers & Viewers | Contact Us
800 Independence Avenue SW
Washington, DC 20591

Learning Center Library

The second part of the Aviation Learning Center is the Learning Center Library, which is intended to give airmen convenient electronic access to a wide range of online aviation safety material developed by the FAA, other U.S. Government agencies, and the private sector. As in the other sections, material in the Learning Center Library is organized according to subject (e.g., "weather") and audience (e.g., "Airmen-Pilots") categories.

Learning Center Library content is searchable. Type keywords for the document types you want into the search box, click the "Search" box, and browse the list of documents that meet your requirements. One of the handiest features of the search function is that you can use it to search not only the library, but also information from the entire site—everything from courses to news items to events.

A primary goal of the Learning Center Library is to make text, audio, and video content developed by the FAASTeam and its predecessor, the FAA Aviation Safety Program, readily available. This material includes "P-pamphlets" and DVDs on a variety of subjects, as well as safety-oriented articles from the *FAA Aviation News* and other sources. Many Learning Center Library documents are available in both text and PDF formats, and all text documents include a "printer-friendly" version.

Online Resources

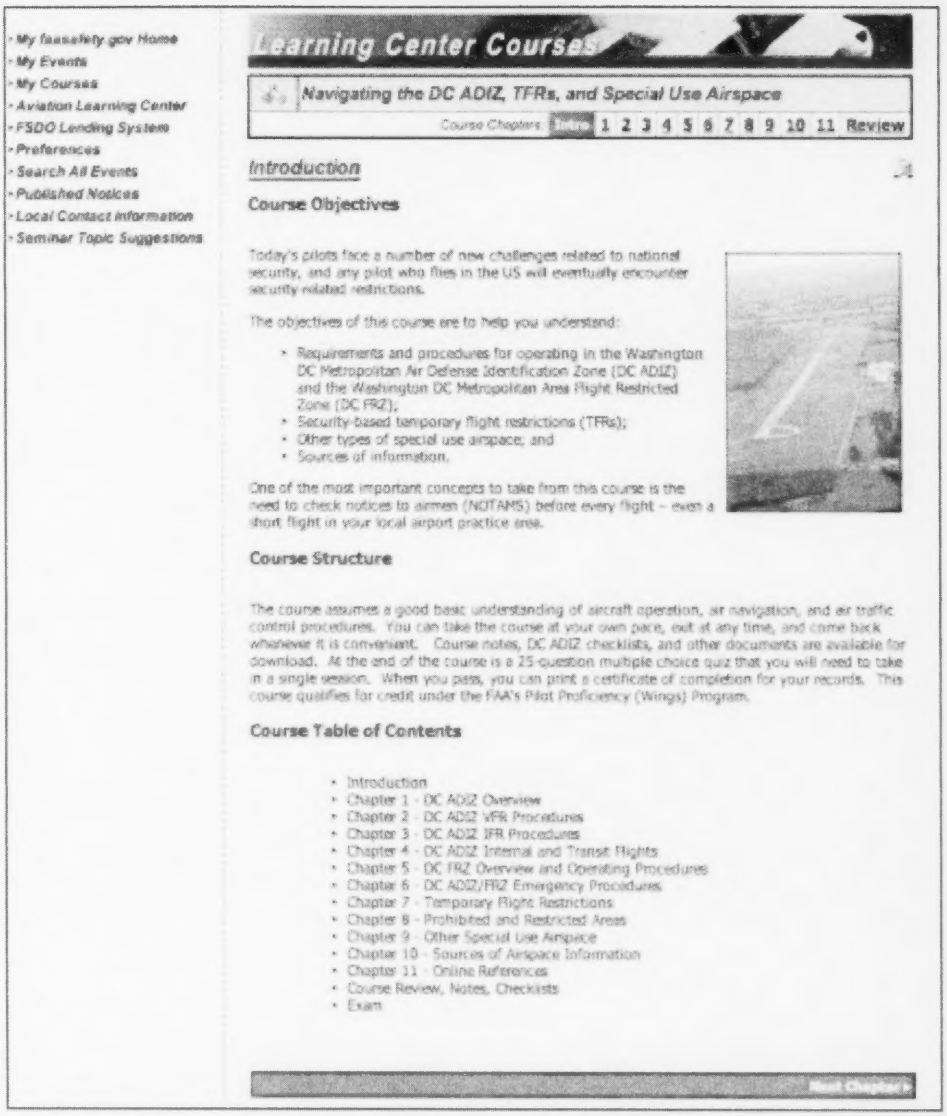
You don't have to surf the Internet very much to realize that there is a great deal of aviation safety information available in cyberspace. The purpose of the Online Resources section of the ALC is to give airmen a convenient, and structured, electronic portal to some of the key online aviation safety resource materials developed by the FAA, other U.S.Government agencies, and the private sector.

As in other sections of the ALC, subject (e.g., "Weather Informa-

tion") and audience (e.g., "Pilots-CFI") categories provide the organizational structure. Category names in Online Resources match those in Online Courses and the Learning Center Library in many cases, but some category names in Online Resources (e.g., "Organizations / Associations") are unique to this section.

Links for Online Resources take the user to aviation safety-related information located on the FAA corporate Web site <www.faa.gov>, Web sites for other U.S. government agencies (e.g., NASA, NTSB, NOAA), or sites developed by educational or non-profit organizations (e.g., Air Safety Foundation or ASF) that make safety information available at no cost to users. For example, the Online Resources section includes links to the ASF's many free online training courses on a variety of aviation safety topics.

The Online Resources section has three sub-sections: Resources for Pilots, Resources for Mechanics, and Published Safety Program Notices. The first two provide flight safety-related Web site links that are of interest to pilots or mechanics. Some of the categories to choose from include: Aircraft & Airworthiness; events; Guidance, Standards, Regulations; Tools; and Training Courses. The third site provides links to public notices that range from ATC notices to FAA charting information to local safety information.


My faasafety.gov Home
My Events
My Courses
Aviation Learning Center
FSDO Lending System
Preferences
Search All Events
Published Notices
Local Contact Information
Seminar Topic Suggestions
Learning Center Courses
Navigating the DC ADIZ, TFRs, and Special Use Airspace
Course Chapters: Intro 1 2 3 4 5 6 7 8 9 10 11 Review
Introduction
Course Objectives
Today's pilots face a number of new challenges related to national security, and any pilot who flies in the US will eventually encounter security-related restrictions.
The objectives of this course are to help you understand:
Requirements and procedures for operating in the Washington DC Metropolitan Air Defense Identification Zone (DC ADIZ) and the Washington DC Metropolitan Area Flight Restricted Zone (DC FRZ);
Security-based temporary flight restrictions (TFRs);
Other types of special use airspace; and
Sources of information.
One of the most important concepts to take from this course is the need to check notices to airmen (NOTAMS) before every flight – even a short flight in your local airport practice area.
Course Structure
The course assumes a good basic understanding of aircraft operation, air navigation, and air traffic control procedures. You can take the course at your own pace, quit at any time, and come back whenever it is convenient. Course notes, DC ADIZ checklists, and other documents are available for download. At the end of the course is a 25-question multiple choice quiz that you will need to take in a single session. When you pass, you can print a certificate of completion for your records. This course qualifies for credit under the FAA's Pilot Proficiency (Wings) Program.
Course Table of Contents
Introduction
Chapter 1 - DC ADIZ Overview
Chapter 2 - DC ADIZ VFR Procedures
Chapter 3 - DC ADIZ IFR Procedures
Chapter 4 - DC ADIZ Internal and Transit Flights
Chapter 5 - DC FRZ Overview and Operating Procedures
Chapter 6 - DC ADIZ/FRZ Emergency Procedures
Chapter 7 - Temporary Flight Restrictions
Chapter 8 - Prohibited and Restricted Areas
Chapter 9 - Other Special Use Airspace
Chapter 10 - Sources of Airspace Information
Chapter 11 - Online References
Course Review, Notes, Checklists
Exam

Online Courses—such as this one on Navigating the DC ADIZ, TFRs, and Special Use Airspace—are intended to be meaty "steak-and-potatoes" offerings that are quick to download, easy to complete, and full of useful information.

When it comes to aviation safety, you can never know too much. So check in soon and check it out, and check back often as the Aviation Learning Center continues to grow!

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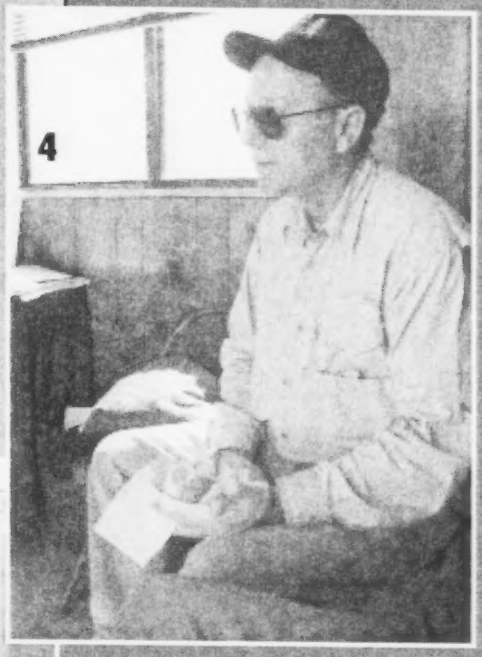
Susan Parson is a Special Assistant in Flight Standards' General Aviation and Commercial Division and is an active GA plot and a NAFI Master CFI.

Note: We welcome your comments and suggestions for the Aviation Learning Center. Provide feedback via the "webmaster" link on www.faasafety.gov, or send ideas to james.e.pyles@faa.gov and susan.parson@faa.gov.

Reno Air Race Memories



In our last issue, an article on the Reno Air Races acknowledged that this is the last year that Clarence Bohartz will be the FAA inspector in charge. Clarence is retiring at the end of the year, so he and fellow inspector David Butler decided they would like to share some photographic memories of our editor, Dean Chamberlain, and his adventures at the races.

1: Our intrepid editor ready for a long day at the Reno Air Races.

2: Dean is finally getting up in his chosen profession. He reached new heights when he climbed atop the home pylon (about 40 feet in the air) in search for the perfect photo. Now who said he is a pilot who hates high places?

3: Clarence Bohartz (right) talks to our intrepid reporter during one of Dean's periodic stops at the temporary FSDO support trailer in the pit area. In fact, everyone stops at the trailer to talk to Clarence during race week.

4: Dean is starting to show what a few days at the races can do to you, or it might be the number of sausage sandwiches he has eaten while covering the races for FAA Aviation News.

Just for the Health of Pilots — Sarcopenia

Sarcopenia—muscle wasting—is the age-related loss of skeletal muscle mass, strength, and function.

by Glenn R. Stoutt, MD
Senior FAA Aviation Medical Examiner

I wrote a column in each issue of the *Federal Air Surgeon's Medical Bulletin* for five years, entitled like this one, "Just For the Health of Pilots." The last article, published in the Spring 2003 Bulletin, was about hip fractures.

But, good deeds do not go unpunished. Last summer, I was thrown off my riding mower, breaking my left hip at the top of the largest bone in the body, the femur. I was 76 then. Not good.

Surgery and rehabilitation entailed about eight weeks of mostly lying in bed or sitting in a chair. Every week of complete bed rest results in a loss of at least 10% of muscle strength. At first I was pleased that I had lost 23 pounds. Not a good thing, as the weight drop was mostly loss of muscle, not fat. Injury plus age: I had met sarcopenia face to face.

After intensive physical therapy and continuing strength training, I can now walk a mile (slowly), and am back in the office as an aviation medical examiner three days a week.

The medical literature on wellness now gives top priority to strength training—-with resistance exercises and use of weights being emphasized as essential for healthful lifestyles and healthy bodies. Muscle is the heaviest system in the body, composing 40% of men's weight and 23% of women's.

Lean muscle mass is dependent upon innervation. If the nerves to muscles are injured or cause paralysis, muscle atrophy develops. But, excluding injury, almost all sarcopenia is age-related and inevitable, with progressive replacement of muscle tissue by fat. Human nerve cells have a predetermined life span. Signals go from the brain to muscle, and as nerve fibers decline, so do the muscle fibers they innervate. In older people, this loss of muscle mass and strength can lead to inability to climb stairs or get up out of chairs without holding onto the arms and causes a likelihood of falls.

Sarcopenia begins as early as age 20 or 25 and lean muscle mass decreases about one-half percent for every year of age up to about 60, when the loss accelerates. In our 70s, 80s, and 90s the loss is exponential. Here are convincing statistics: take the world records in running and swimming for the 100-, 200-, and 400-meter events. Men and women invariably had poorer performance times as their age progressed in five-year increments.

Skeletal muscle is a calorie-burning furnace. Lean muscle burns calories rapidly even in the resting state. Weight loss is rarely successful by diet alone. Muscular people can eat much more than obese ones. After weeks of disciplined strength training and reasonable dieting, a person may wonder why the bathroom scale readings have unchanged. The reason is that there has been fat loss but a much greater increase in the heavier muscle mass. Conversely, a man 65 who does not exercise may brag that he weighs exactly the same as the day he graduated from college. The truth is that he has had an increase in fat and a loss of lean muscle.

Nowhere is the rule "use it or lose it" more important than exercising our bodies. Although sarcopenia cannot be stopped, it can be slowed or lessened by strength training. No matter what your age, you can strengthen any muscle mass you have.

Flabby muscles can become much stronger. Exercise programs in nursing homes have produced dramatic increases in mobility and function—some patients were even able to discard their walkers or canes. Exercising also strengthens bones.

However, don't overdo it by joining the exuberant fitness fanatics who leave each workout in a state of self-satisfied exhaustion. For some sensible, current, and reliable answers to just about any questions about exercise, refer to the sidebar.

I recently told a friend that I still was not the person I used to be. He said, "You never were." But there was sense in his good-natured barb: We can't regain our body of years ago, but we can definitely lessen the effects of aging by exercise and muscle training. It is absolutely the most effective intervention for loss of muscle mass, strength, and function.

Yours for good health and safe flying.

+

Glenn R. Stoutt, MD, is a Senior FAA Aviation Medical Examiner.

This article originally appeared in the Federal Air Surgeon's Medical Bulletin. Its Web site is <http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/fasmb/>.

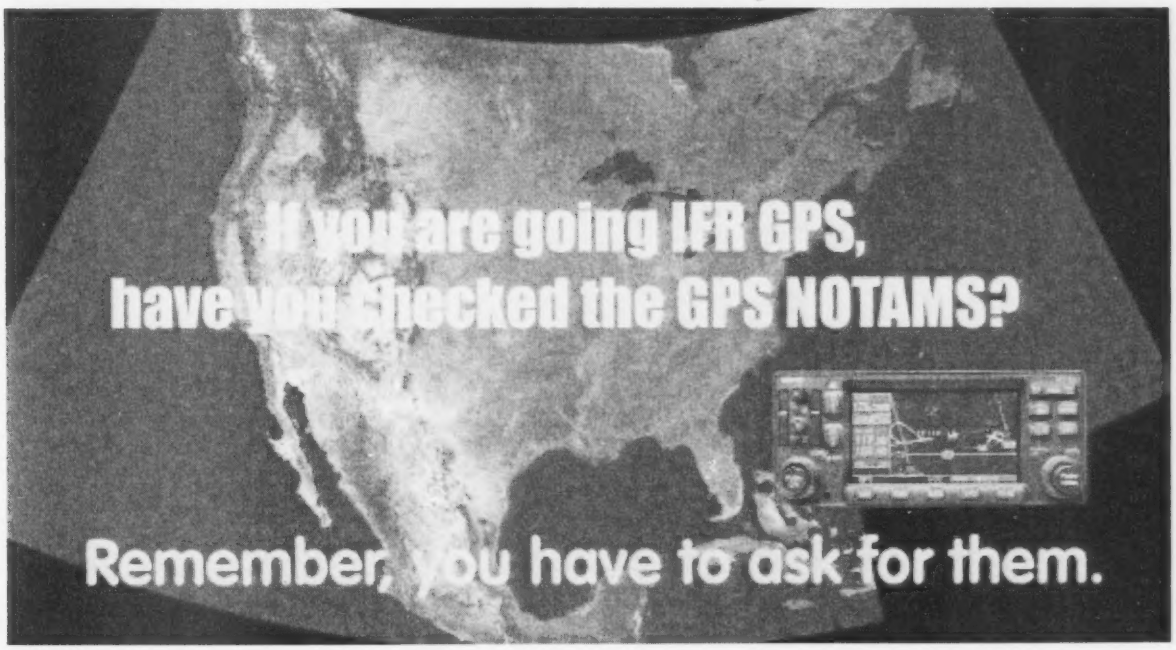
THE TWO FLAVORS OF EXERCISE

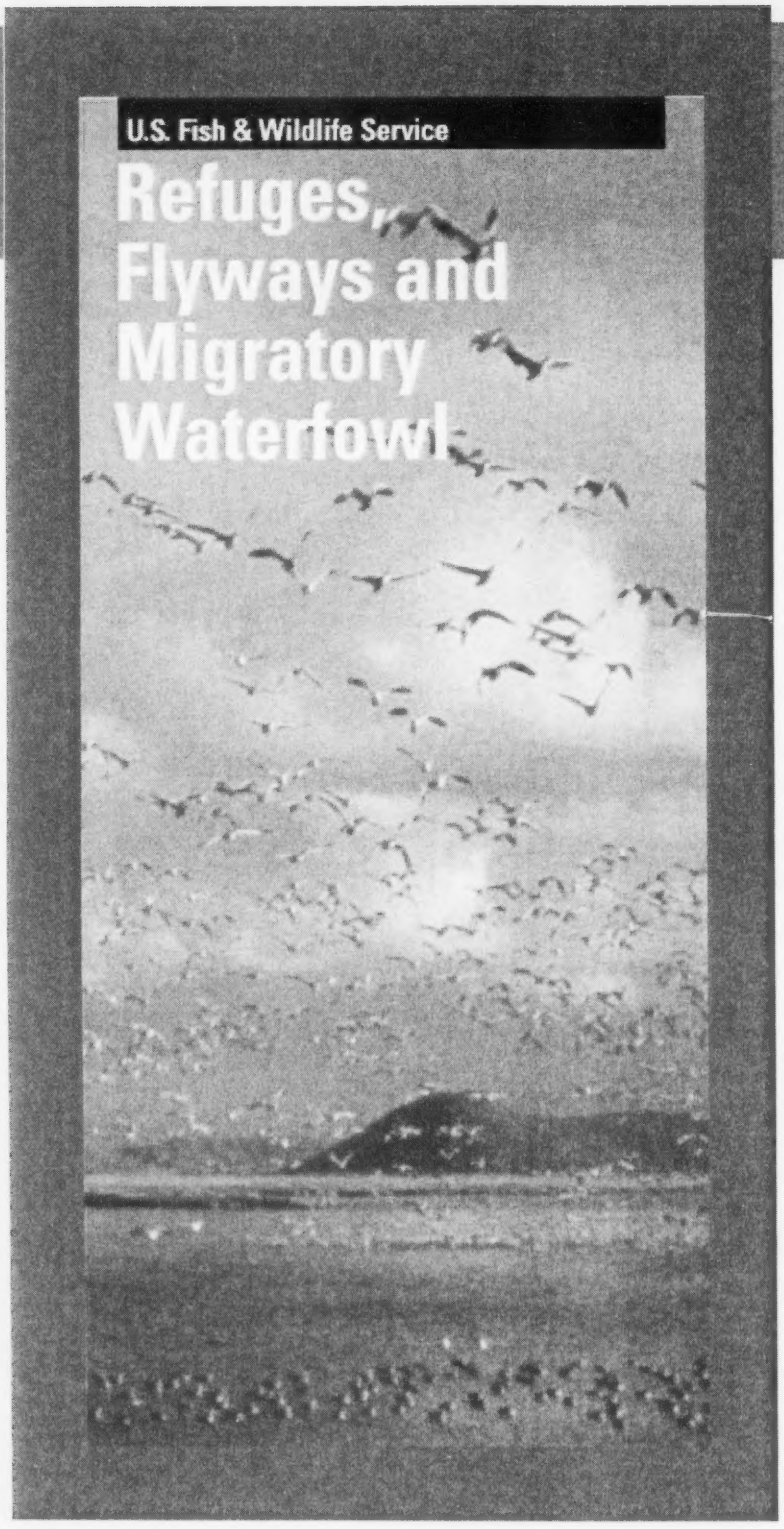
Cardiovascular or aerobic

These exercises include walking, jogging, running, swimming, biking, hiking, and so on. There is sound evidence that running or jogging three times a week gives you all the cardiovascular protection you need. Any reasonably vigorous aerobic session of 30 minutes is adequate.

Strength exercises

- Either join a fitness center or get your own simple and inexpensive equipment for home workouts. For either choice, an absolute need is to get a competent instructor to teach you, from the day you start, the proper way to use the equipment. Good habits are as hard to break as bad ones. You want to be helped, not injured.
- Your home equipment can be as simple as four or five sets of dumbbells and maybe some elastic bands (light and portable).
- For dumbbells, select one you can lift only once, and then start your program with half this weight. So, if you can lift 20 pounds once, start building up to 10 slow, smooth repetitions with 10 pounds. Then gradually build up to three sets of 10 repetitions. After a few weeks, go up to 15 pounds and repeat the process.
- Muscle strengthening requires *progressive overloading*, so the weights must be gradually increased to what you think is your absolute safe maximum. An older person must be satisfied with lower goals.
- Never hold your breath when lifting a weight; this causes a marked increase in blood pressure. Breathe in or out slowly while you lift.
- Plan to do eight to 10 exercises of all the major muscle groups. If you can do only your upper body in one session, do your abdominals and legs the next time.
- Allow 20 minutes for actual weight or resistance movement and 10 minutes for brief rest periods between exercises, making a total of about 30 minutes. Do strength training three times a week, and wait at least 24 hours before the next workout, giving your muscles time to rest and rebuild





Nature's Protected

Grab a sectional chart. Take a look around it. Do you see any areas outlined with a solid blue line with blue dots on the inside of the line? Do you know what these areas are? When was the last time you took a close look at these areas? Do you know why they are to be avoided or their altitude restrictions observed? Is it really that important to observe the minimum published altitudes?

What goes on inside these blue lined and dotted areas that require aircraft to remain well above the ground or above the highest obstacle within their boundaries and that can pose a serious hazard to aircraft flying in or around these areas?

The definitions for the markings normally can be found somewhere along the edge of the sectional. Briefly, the blue line marks the boundary of National Park Service areas, U.S. Fish and Wildlife Service areas, and U.S. Forest Service wilderness and primitive areas. The definition includes aircraft usage restrictions, minimum altitudes, and other restrictions noted in Advisory Circular (AC) 91-36D dated September 17, 2004, *Visual Flight Rules (VFR) Flight Near Noise-Sensitive Areas*. These areas can include bird sanctuaries, national wildlife refuges, wilderness areas, or national parks. When charted, the name, which normally includes the type of area, is located near or within the marked boundary area.

Why must aircraft stay at or above the posted altitudes if it is just wildlife moving around on the ground? After all, according to Title 14 Code of Federal Regulations (14 CFR) section 91.119, Minimum safe altitudes: General, aircraft can fly in rural areas as long as the aircraft remains at least

Areas: A Potential Risk To Aircraft

by Al Peyus

500 feet from any person, vessel, vehicle, or structure and be legal. So why not in these lined and dotted areas?

A little history will help you understand what started all these protected areas. The first national park was set aside by the U.S. Government to protect the uniqueness of the park area. The land was set aside to remain as it is to allow the citizens of the United States, and the world, to see portions of this great country as it has always been before man started to rearrange, change, modify, and destroy the natural beauty of the land.

A perfect example is Yellowstone National Park. In 1872, President Ulysses S. Grant signed into law the creation of the first national park, declaring that Yellowstone would forever be "...dedicated and set apart as a public park or pleasuring ground for the enjoyment of the public." These parks are some of the most beautiful portions of our wonderfully diverse country. Today, the government provides protection, guidance for the use, and the limitations of occupancy and operation in and around these national parks and areas.

Years ago, flying tours were allowed to drop down below the walls of the Grand Canyon. After several mid-air accidents, some aircraft failing to successfully climb back out of the Grand Canyon, and a multitude of noise complaints from the public, flights below the walls of the Grand Canyon were ordered to a halt. Today, flight operations in the vicinity of the Grand Canyon National Park are regulated by Subpart U, 14 CFR part 93.

The national wildlife sanctuaries, such as the Quillayute Needles National Park Refuge on the coast of Washington State, protect a wide variety of wildlife. The altitude restrictions are for the protection of the animals. Aircraft noise can scare the wildlife and disrupt the daily lives of these creatures. During mating season, aircraft can disrupt mating and, thus, potentially impact an entire generation of wildlife.

WILDLIFE HAZARDS

Speaking of wildlife sanctuaries and refuges, these also have altitude restrictions for aircraft and for excellent reasons! Wildlife sanctuaries and refuges can be a hazard to both the wildlife as well as aircraft. If there ever was a doubt about the safety concern, allow me to introduce you to some very attention producing numbers.

Wildlife strikes can pose a serious safety risk to aviation. Of all the wildlife strikes, birds are the number one cause (97.5%) for strikes involving aircraft. The Federal Aviation Administration (FAA) and the United States Air Force (USAF) databases contain information on 66,392 U. S. civilian and military aircraft wildlife strikes reported between 1990 and 2005. This is only a 16-year time span with more than 66,000 strikes! Of those wildlife strikes, 4,532 aircraft suffered minor damage, 2,433 aircraft received substantial damage, while 36 aircraft were destroyed! The injury count was 172 people injured to various degrees, while nine people lost their lives.

For in-flight strikes to engines, the numbers are even more impressive. There were reported 8,750 incidents with bird strikes involving aircraft in which a total of 9,206 engines were reported struck. Damage occurred to at least a third, or over 3,000 of the engines hit in bird strikes!

Let me turn your attention to another important part of this story. According to an estimate by the FAA during the same time period, yearly, Yes, yearly financial losses for damage to aircraft caused by wildlife are about $500,000,000! Yep! That is $500 million dollars! Do I have your attention yet?

Aircraft repair down time after a wildlife strike is another sobering statistic. Thousands of hours are required each year to repair engines and airframes damaged by strikes.

Most of the reported incidents/accidents occurred close to or around airports. Many airports are in or near national parks, wildlife sanctuaries, or refuge areas. The altitude most often listed at the time of impact is at or below 2,000 feet above ground level (AGL). More frightening is that 60% of bird strikes occur at altitudes of less then 100 feet AGL! It is a "perfect" time for a collision when aircraft are at their most vulnerable during takeoff and landing.

As stated earlier, birds of all sizes are the most common wildlife involved in reported aircraft incidents/accidents. Where do the birds come from and why are they and aircraft coming into contact so often?

Both aircraft and birds use the National Airspace System (NAS) as a road system through which to get from "A" to "B." One of the more common places birds like to gather is the same area as aircraft—airports! The open space, plenty of nesting locations (including the engine nacelle), and plenty of food (insects, mice, other birds, and wildlife) are perfect for our feathered fowl friends.

Each time an aircraft takes off or

lands at a bird-occupied field, the chance of collision increases exponentially. Many birds take flight at the most inopportune time, especially when startled. Just as an aircraft lifts off or is on short final for landing, the birds on the ground take flight and scatter in every direction. When encountering birds during flight and not close to the ground, it is generally best for a pilot to climb to minimize collision. The birds will normally dive to avoid an aircraft.

Another factor is that birds do not normally have the skill, training, experience, or equipment to fly in instrument conditions. They generally fly below the cloud deck or above it. As those pilots who have flown IFR during the fog season near a game refuge or bird sanctuary can attest, the most heart racing time comes as the aircraft breaks out on top of the fog and there they are! It can get the heart pounding as the waterfowl fly over, around, and through the aircraft struts, wings, and landing gear! Now that is the type of excitement pilots would prefer not finding!

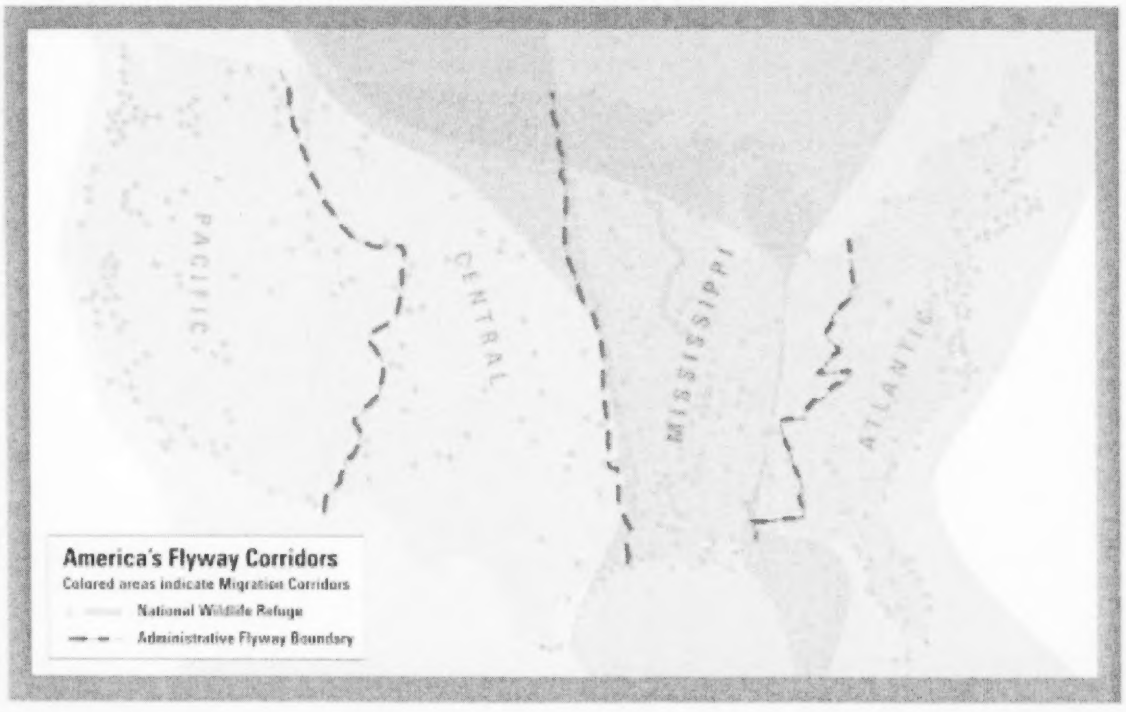
The same happens when the aircraft starts an IFR descent on the approach and passes through the bottom of the cloud deck. Suddenly there they are again! The birds seem to flow like water through and around the aircraft. All too often one of the birds will strike a portion of the aircraft. In most cases it produces minor damage to the aircraft wing, strut, or fuselage.

Being in the clouds does not necessarily guarantee safe passage around birds. There are exceptions out there, as with almost every thing! Several bird strikes have been reported in the clouds!

When a large bird like a goose, duck, or raptor strikes the windscreen or engine, it now becomes an emergency! When the aircraft windscreen is broken, the cockpit gets very noisy, cold, and highly distracting for the pilot and passengers. If the bird breaks through and enters the cockpit, there is another leap in problems. A goose weighing about 10 pounds breaking through the windscreen of a 125 mph aircraft is a mighty projectile. Slowing only slightly, it can strike the pilot or passenger with lethal impact. And we think a baseball traveling at 90 mph hitting a batter hurts!

Other potential collision locations are during flights over national wildlife sanctuaries that are the homes for migrating waterfowl. These areas attract numbers of waterfowl that astound the mind—literally, millions of birds stop over in these areas. And these are not just those birds that migrate. The local birds enjoy these areas too and arrive in very large flocks. The food is great, the water is comfortable, and the space is wide open! These locations are great for the birds, but dangerous for aircraft of all sizes.

Normal altitude restrictions over these areas start at 2,000 feet AGL. But even at that altitude there is no guarantee of an aircraft's safe passage. On a clear and unobstructed day, ducks can be seen at 5,000 feet! Just ask any hunter. Geese, on the other hand, have been spotted, and occasionally struck, at altitudes over 15,000 feet AGL. Table 9 in the *FAA National Wildlife Strike Database Serial*



Source: U.S. Fish and Wildlife Service

Report Number 12 titled, "Wildlife Strikes to Civil Aircraft in the United States 1990-2005," reported that although the majority of the strikes were below 500 feet above ground level, 13 strikes were reported above 20,000 feet and one was reported above 30,000 feet. At these altitudes, how many pilots out there can say they are always looking out for birds? The government has diagrams showing the major migratory routes used each year by migratory birds. During the seasonal migrations, aircraft are particularly vulnerable when operating in or near those areas.

There are locations in California that are south of Bakersfield and north of Los Angeles that are the home territory of the California condor. I have had the opportunity to see one in flight! Picture a bird that can have a wingspan nine feet or greater and weighs from 17 to 25 pounds according to the U.S. Fish and Wildlife Service's Internet condor Web site. An impact with one of these could ruin anyone's day, and it would not do the condor any good either!

BIRDS ARE NOT THE ONLY RISK

What other problems are out there in the wildlife areas that are a concern for pilots and aircraft? It is the same concern we have when flying into airports that have animal life in the area. From islands such as Nantucket to the northern reaches of Maine to the plains of Texas to Central Florida to the Seattle area, wildlife exists.

Deer, fox, coyotes, alligators, elk, moose, rabbits, wild dogs, and even bears are a danger to aircraft operations at airports. Day or night, but especially at night, these creatures can run into the path of aircraft landing or taking off. So, what can pilots do to mitigate an encounter of this nature? For these land creatures the safety issues fall into two categories.

During the day, the pilot must be vigilant, listen to the radio, and talk to other pilots on the local airport frequency asking if they have seen or encountered any wildlife. During this time period, the animal collisions are most often caused by animals running into the aircraft path because they were frightened from their hiding space.

Nighttime provides its own unique problems. Even towered and fenced airports can have "guests" visiting the runways and taxiways! Uncontrolled airports in rural areas are the most dangerous. Fences provide minimal separation and human habitat is limited immediately around the airport. People living around the airport actually help minimize large animal activity.

Every environment has its own concerns, issues, and problems. In many cases, the same precautions work. These following suggestions been garnered from many experienced pilots flying around and near wildlife of all sorts from California to Maine and all points in between. Here are several actions you may want to consider in mitigating wildlife encounters.

For birds of all shapes, sizes, and numbers:

- Keep as many external lights on as you have on the aircraft. For some strange reason no one has been able to fully explain, birds "sense" or see the aircraft lights and try to avoid them.
- Unless close to the ground, pull up and gain altitude whenever possible around the birds. They will normally dive down to avoid the aircraft! When they know you are there and have not been surprised (as when the aircraft pops out of a cloud or fog bank right into a flight of geese) birds do their best to avoid you.
- Allow more then the minimum recommended altitude over bird sanctuaries/refuges/national parks. By giving up more altitude, the aircraft has a larger buffer zone, which provides more reaction time. The more time the pilot has the better the chance to mitigate or avoid an unplanned encounter.
- Whenever possible, when you know you are going to be flying around birds, try to wear protective eyewear. Even a small piece of debris can cause a major problem with your eyes.

For those four-legged wildlife (deer, elk, moose, fox, coyote, rabbits, wild dogs, and bear):

- At airports that have active control towers, during the day report any animal spotted in the airport environment. The tower personnel will pass the information to the airport manager's office, which will send someone in a vehicle to chase critter away.
- At non-towered airports, if during the day an animal is spotted inside the perimeter, contact the fixed based operator (FBO). Someone may be available to chase the animal from the airport boundaries. Also listen to the radio at least 10 nautical miles out. There may be someone ahead of you who has already spotted critters.
- During night operations, the FBO is still your best source of information. If no one is around, then carefully and safely as you can, announce your intentions. Before takeoff, taxi down the runway to try and scare any animal around the runway away. When landing, make a low fly-by. This will allow the pilot to see what may be on the runway and, hopefully, scare away any critter grazing along side the runway.

The best advice in any case is to be cautious. There are times of the year when it pays to be extraordinarily cautious. During mating season the male deer, elk, and moose do strange things. Males challenge other males, chase female, and scatter the young. Even a small herd of deer calmly grazing in a field a good distance from the runway can scatter and run into the path of the aircraft when two males are fighting. Not only is the herd scattered, but all the smaller creatures in the area run from the clashing males.

Some of nature's own do not fear aircraft! A case in point was an en-

counter I had with a bear. While on final approach to an airport in northern Maine, I observed a large bear sitting on the edge of the runway. As I watched, the bear was enjoying blueberries from several bushes that were growing wild along side the runway.

Two low passes were made. The first did not even cause the bear to look up. The second pass did cause a passing glance, but no other movement. A call was made to the FBO after the first pass and by the time the second pass was completed, a car was sent to try and chase this very large obstacle from the runway. It took three cars over 20 minutes to distract the bear from the berries. Or, the berries were gone by then and the bear was ready to leave.

There are times a change of course is not possible. When flying over or near a national park, sanctuary, or refuge, please try to fly higher than the altitudes posted. Whenever possible, navigate around these areas. You can take actions to mitigate potential encounters with wildlife.

To avoid tangling with wildlife, pilots should be extra vigilant when taking off or landing and do everything possible to make the aircraft more visible or make sufficient noise to scare the critters away from the aircraft path. Every pilot needs to be aware of possibility of critters running into harms way. Those small "yellow lights" blinking out there may be an animal's eyes reflecting your aircraft lights and this member of nature could be responsible for ruining your day.

Check the sectional charts. Mark national parks and wildlife areas! Avoid these areas whenever possible. When operating in and around them, please be cognizant and maintain full alert for the creatures that live in the area.

Al Peyus is an Aviation Safety Inspector in Flight Standards' General Aviation and Commercial Division.

The Airport Wildlife Hazard Mitigation homepage can be found at <http://wildlife-mitigation.tc.faa.gov/public_html>. It also contains information on how to report bird strikes.

Do You Know the Difference between Being Legal and Being Proficient?

by H. Dean Chamberlain

Within the FAA Flight Standards General Aviation and Commercial Division here in Washington, we generally discuss two terms when talking about pilots being pilot in command. The terms are currency (legal) and proficiency. The two terms are not synonymous. You can be legal, but not proficient, or you may be proficient, but not legal.

BASIC PIC

To serve as pilot in command (PIC), a pilot is required to meet certain currency standards as outlined in Title 14 Code of Federal Regulation (14 CFR) section 61.57, Recent flight experience: Pilot in command. For example, that section states in part, "

(a) General experience.

(1) Except as provided in paragraph (e) of this section, no person may act as a pilot in command of an aircraft carrying passengers or of an aircraft certificated for more than one pilot flight crewmember unless that person has made at least three takeoffs and three landings within the preceding 90 days, and—

(i) The person acted as the sole manipulator of the flight controls; and

(ii) The required takeoffs and landings were performed in an aircraft of the same category, class, and type (if a type rating is required), and, if the aircraft to be flown is an airplane with a tailwheel, the takeoffs and landings must have been made to a full stop in an airplane with a tailwheel.

The key elements in this regulation include, but are not limited to: carrying passengers; three takeoffs and landings, within 90 days; category and class; type rating if applicable; sole manipulator of the flight controls; and a special landing requirement if a tailwheel airplane is to be flown.

If all of your flying has been in a tricycle gear airplane and you have made three or more landings within the past 90 days, no matter how many hours you have flown or how many takeoffs and landings you have made or how proficient you are in the tricycle gear airplane, you would not be legal to carry a passenger in a tailwheel or "conventional" gear airplane unless you have made three takeoffs and landings to a full stop in an airplane, with a tailwheel within 90 days. Please note: This regulation also requires the tailwheel landings to be made to a full stop.

If you are flying a tricycle gear airplane, a full stop is not required by the regulation. You can make three touch and go landings in a tricycle gear airplane to meet the requirement.

The regulation also explains when a flight simulator or flight training device may be used.

If you are not current, the regulation explains how you can become current and under what conditions.

NIGHT PIC

In subpart (b) of the regulation, it defines what a pilot must do to be legal to serve as pilot in command carrying a passenger during the period beginning one hour after sunset and ending one hour before sunrise. The requirement is similar to the previous PIC currency requirement for carrying a passenger with the major exception that the required landings during this period must all be made to a full stop regardless of type of airplane flown.

INSTRUMENT PIC

The currency requirements outlined in this section are even more detailed. A major difference is that the previous PIC requirements referred to being able to carry a passenger. The instrument PIC requirements refer only to being able to operate under Instru-

ment Flight Rules (IFR) or in weather conditions less than the minimums prescribed for Visual Flight Rules (VFR). If you are carrying a passenger, you must meet the other flight requirements as appropriate.

The complete instrument currency requirement is listed in subsection "(c) Instrument experience. Except as provided in paragraph (e) of this section, no person may act as pilot in command under IFR or in weather conditions less than the minimums prescribed for VFR, unless within the preceding six calendar months, that person has:

1) For the purpose of obtaining instrument experience in an aircraft (other than a glider), performed and logged under actual or simulated instrument conditions, either in flight in the appropriate category of aircraft for the instrument privileges sought or in a flight simulator or flight training device that is representative of the aircraft category for the instrument privileges sought—

(i) At least six instrument approaches;

(ii) Holding procedures; and

(iii) Intercepting and tracking courses through the use of navigation systems.

(2) For the purpose of obtaining instrument experience in a glider, performed and logged under actual or simulated instrument conditions—

(i) At least three hours of instrument time in flight, of which one and a half hours may be acquired in an airplane or a glider if no passengers are to be carried; or

(ii) Three hours of instrument time in flight in a glider if a passenger is to be carried."

INSTRUMENT PROFICIENCY CHECK

Subpart (d) of this regulation provides a detailed procedure for IFR pilots to regain their instrument currency, if not current. Subsection (d) Instrument proficiency check, states in part, " Except as provided in paragraph (e) of this section, a person who does not meet the instrument experience requirements of paragraph (c) of this section within the prescribed time, or within six calendar months after the prescribed time, may not serve as pilot in command under IFR or in weather conditions less than the minimums prescribed for VFR until that person passes an instrument proficiency check consisting of a representative number of tasks required by the instrument rating practical test.

Although *FAA Aviation News* is not reprinting all of the instrument proficiency check requirements, they are listed in the regulation. The following two Internet URLs can take you to this regulation. The first URL goes to an FAA Internet site: <http://www.airweb.faa.gov/REGULATORY_AND_GUIDANCE_LIBRARY/RGFAR.NSF/0/253B8561B407368686256DAC004DA961?OpenDocument>. The second URL will take you to a site through the Government Printing Office's Internet site: <http://a257.g.akamaitech.net/7/257/2422/14mar20010800/edocket.access.gpo.gov/cfr_2003/pdf/14cfr61.57.pdf>.

The final comment concerns that special area of aviation we seldom think about: Insurance. You might be FAA legal. You might be proficient. But do you meet any special insurance qualifications issued with your insurance. For example, for someone to fly your aircraft, that person might have to be at least a private pilot with 10 hours in make and model. Complex aircraft or high performance aircraft might require more hours both in category and in make and model. A pilot's failure to meet the required insurance minimums may reduce or cancel your coverage in case of an accident. If you are flying with another certificated pilot, in the event of an accident, it may reduce any potential liability if there is some record of who is PIC. In some cases, it is obvious. But, in some cases, it may not be so obvious who was flying at the time of the accident. In some cases, a court may have to decide who was flying at the time of impact. With responsibility goes accountability.

As you can see, there are many legal requirements that pilots need to remember. You might just want to add the above items to your personal checklist before your next flight. Are you current or proficient? Hopefully, you should be both.

Susan Parson photo

Aviation Maintenance Alerts

Beech: 58; Pneumatic Deice System Contamination; ATA 3010

(The following report is one of four nearly identical submissions from the same mechanic describing four different aircraft of the same model.)

"During prolonged periods of operation in heavy precipitation considerable amounts of water enter into the pneumatic system," states the mechanic. "*(This particular aircraft)*...was operated in the heavy precipitation for a period of 9.4 hours. Subsequent flights generated complaints of moisture and condensation in the pneumatic gauge. Inspection of the pneumatic system revealed large amounts of water being passed through the deice boot ejector. Further disassembly and inspection revealed several ounces of residual water remaining in the system. The system was purged of all water and dried. The filter installed in the system is confirmed to be the proper part number. The integrity of the guard assembly was confirmed and *(its)* orientation was correct as per the aircraft maintenance manual. The aircraft was returned to service. *(Approximately 5 weeks later)* the pneumatic system was *(again)* inspected and found to be contaminated with water. The flight crew reported *(again)* the aircraft *(had been)* operated for an extended period of time in heavy precipitation. *(It should be noted)* this aircraft has a history of premature flight command indicator failures caused by rust and water contamination. Water entering the aircraft's pneumatic de-icing system renders the system inoperative at temperatures below freezing.

"Probable cause: *(both)* the location of the pneumatic system inlet filters and the design of the guard allow impact water to enter into the pneumatic system. *(I recommend)* relocating the pneumatic system filter to an area behind the engine baffle assembly where it will not be subject to impact water." Part Total Time: (unknown).

Cessna: 175B; Cracked Engine Mount Attach Brackets; ATA 5313

The submitter states, "This aircraft experienced a hard landing. During the landing the two top engine mount attach brackets failed behind the firewall, allowing the top half of the firewall to fail, pulling forward and down about 18 inches. The part number 0513132-11 engine mount attach bracket fits onto the front of the hat channels. *(This same part)*—which has a hole in it for the engine mount bolt to go through—had failed some time ago on the pilot's top side...*(as evidenced by rust being found in the break surfaces of two pieces).* The bracket on the co-pilot's top side had an existing crack in the center third—at the bolt hole. Rust was also *(evident on these crack surfaces).*" "This aircraft had an STC'd *(Supplemental Type Certificate)* Continental IO-360 engine installed...." *(SDRS data base records 17 entries on this particular part number.)*

Diamond; DA40-180; Cracked Exhaust Riser; ATA 7810

A mechanic said he ordered a brand new exhaust riser for this aircraft's Lycoming IO360 number two cylinder. "Inspecting the riser before installation, we found a crack at the weld radius of the mount flange and the exhaust pipe.

"This is the first crack seen on new risers sent to us, but we have had two in-service risers crack at 780.4 hours *(on one aircraft)...."* *(Another aircraft is mentioned as also having experienced two cracked risers, but the time was not noted. Exhaust riser assembly P/N DA40-3. Three additional entries are found in the SDRS data base.)* Part Total Time: 0.0 hours.

Grumman: AA5-A; Collapsed Wing Fuel Tank; ATA 2810

"The right wing fuel tank collapsed during flight," states a mechanic. "A safe landing was made. We found the fuel tank vent line plugged with insect debris. *(It is recommended to...)* periodically check fuel vents for obstructions, especially when tied down on grass."

Lear: 60; Bent Aileron Drive Yoke Castings; ATA 2710

A repair station technician states, "An incoming inspection found the aileron drive yoke, attach casting—bent. Upon further inspection it was discovered the drive yoke's upper (or lower) shims were not installed. *(However),* the drive yoke attach bolt was installed, causing the casting to be bent. *(Damage like this mandates)* replacement by OEM *(original equipment manufacturer).* This *(error)* could have been prevented by following maintenance manual installation instructions." *(The part number given for the left aileron drive yoke attach casting: 2424000-258.)*

Mooney: M20R; Burned Wire Insulation; ATA 3397

(The following description from this repair station technician aptly demonstrates tremendous potential for significant failures in very small mistakes.) "When troubleshooting the squawk *recognition lights—on all the time,* we found charred wire insulation in the wire harness feeding the overhead bank of switches that control the ship's exterior lighting. We traced the charred insulation to an overheated condition in the recognition light circuit. A sub-standard crimp on a wire terminal was repaired and the overheat condition *(was eliminated).* The squawk *recognition lights—on all the time* was due to the *(burned)* insulation allowing power directly to the recognition lights, circumventing the switch." *(Electrical connector part numbers: 930021-505 and 930021-506: located behind the flight panel on the copilot's side.)* Part Total Time: 170.0 hours.

Piper: PA28-161; Broken Throttle Cable; ATA 7603

"The throttle cable broke in half inside the throttle cable housing," states this submitting mechanic. "When it broke it created frayed ends that caught in the cable housing, resulting in the throttle becoming 'stuck' in the full position." This story ends with the pilot making a successful "dead-stick" landing. The throttle cable assembly P/N provided: 455-350. *(See also mixture cable deprivations in May 2006's Alerts. How do we—as an industry—manage ignoring replacement of such simple, inexpensive parts? Even a lawnmower deserves occasional throttle cable replacement...look at this accumulated time!)* Part Total Time: 9,670.0 hours.

The Aviation Maintenance Alerts provide a common communication channel through which the aviation community can economically interchange service experience and thereby cooperate in the improvement of aeronautical product durability, reliability, and safety. This publication is prepared from information submitted by those who operate and maintain civil aeronautical products and can be found on the Web at <http://www.faa.gov/aircraft/safety/alerts/aviation_maintenance/>. Click on "Maintenance Alerts" under Regulations and Guidance. The monthly contents include items that have been reported as significant, but which have not been evaluated fully by the time the material went to press. As additional facts such as cause and corrective action are identified, the data will be published in subsequent issues of the Alerts. This procedure gives Alerts' readers prompt notice of conditions reported via Malfunction or Defect Reports, Service Difficulty Reports, and Maintenance Difficulty Reports. Your comments and suggestions for improvement are always welcome. Send to: FAA; ATTN: Aviation Data Systems Branch (AFS-620); P.O. Box 25082; Oklahoma City, OK 73125-5029.

• Translation Please

I have read and re-read your article in the *FAA Aviation News*. I am a very new Private Pilot and plan to cut out the page and use it to make my personal minimums easy to remember and refer to when I feel pressured to "make that flight!"

Just one question, in the section on Turbulence and Performance, what do the letters "ME" and "SE" stand for?

Merton Erickson
Via e-mail

The letters "ME" and "SE" stand for multi-engine and single engine.

• Making the Grade

You mention in one of your editorials, "And to ensure we are still doing our job, one of the comments published in that first issue is as valid today as it was then, ' The editors welcome comments and suggestions.' So tell us if we are making the grade, and if we are not, how to improve."

I would suggest that you publish more of the first (1961 and following years) editions of the *FAA Aviation News*.

FAA AVIATION NEWS welcomes comments. We may edit letters for style and/or length. If we have more than one letter on the same topic, we will select one representative letter to publish. Because of our publishing schedules, responses may not appear for several issues. We do not print anonymous letters, but we do withhold names or send personal replies upon request. Readers are reminded that questions dealing with immediate FAA operational issues should be referred to their local Flight Standards District Office or Air Traffic facility. Send letters to H. Dean Chamberlain, Editor, FAA AVIATION NEWS, AFS-805, 800 Independence Ave., SW, Washington, DC 20591, or FAX them to (202) 267-9463; e-mail address:

Dean.Chamberlain@faa.gov

Besides that, I would like to remind you that lesson dissemination is part of any SMS (Safety Management System) as required by ICAO (see annex 11 and doc. 4444), and *FAA Aviation News* does that extremely well.

Congratulations on your 45th anniversary.

Henrique Nunes
Air Traffic Controller
NAV Portugal

Thanks for the compliments.

• No Master Pilot Book

I plan to be in DC and would like to see the book that contains my name for the Wright Brothers Master Pilot Award. Where is it located in FAA HQ?

Name withheld

When the Wright Brothers Master Pilot Award was established, a decision was made to only list the award recipients on the FAA's Internet Web site. You can access the Master Pilot Award List at <http://www.faa.gov/safety/awards/wright_bros/list>.

• Stall/Spin Article

Douglas Gilliss' article, "No More Stall/Spin Accidents" in the May/June 2006 issue was excellent. Well written, good descriptions, convincing statistics, and reasonable solutions. I think spin awareness is frequently overlooked because most instructors and pilots have only had minimum exposure to it. The check rides I give, as a Civil Air Patrol (CAP) check pilot, require full stalls, power on and power off. Occasionally a late recovery leads to an incipient stage spin entry. We probably go a half turn or less before I take over and recover, but that is enough to convince the pilot to go buy some spin training.

I will be using this article to prepare a safety presentation for my CAP Squadron. One thing that I add, from my own experience, is "Release the controls and determine the direction of the spin." That is a technique prescribed for the last three fighters I flew (F-84F, F-100, and A-70). Of course, it is probably too late if you are in a traffic pattern, but it does lead to the point that most general aviation aircraft don't like to spin accidentally, unless a real ham fist is behind the controls.

Bob Beabout
Via e-mail

• Flight Watch Frequencies

In Susan Parson's article, "Weather Decision-Making for GA Pilots," July/August 2006, she gives the excellent advice to use EFAS for en route updates. Parenthetically, she mentioned 124.67 MHz for altitudes above 17,500 feet MSL. I assume she used that frequency in her rough draft to "mark her place," intending to "plug-in" the correct frequencies or a reference to find them later.

The 20 Flight Watch stations in the contiguous U.S. use 20 discrete high altitude frequencies over numerous outlets. Albuquerque Flight Watch has two discrete high-altitude frequencies, sharing one with Indianapolis Flight Watch. These high altitude frequencies are printed in a box beneath the effective date/time on DOD/FAA high altitude charts (just above the Special Use Airspace). The frequency 124.67(5) is only Denver Flight Watch's high altitude frequency.

I felt that Ms. Parson gave the erroneous impression that there is only one high-altitude Flight Watch frequency; and then I couldn't resist the opportunity to tell the specialist's side of the story.

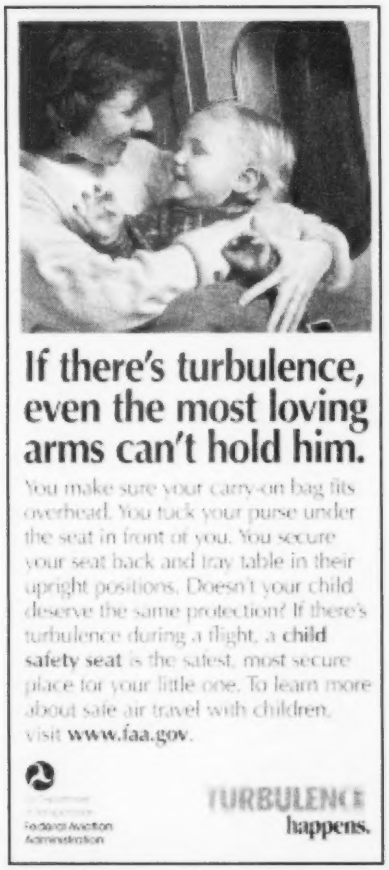
John Stokes
Kankakee, IL.

As Mr. Stokes surmised, the single frequency reference was indeed a "placeholder" for additional information that failed to be added to the draft. We regret the omission and thank Mr. Stokes for the correction and clarification.

FAA APPROVES NEW CHILD SAFETY DEVICE

Air travelers have a new option for securing their children on commercial flights now that the Federal Aviation Administration (FAA) has approved a new type of child safety device, the AmSafe Aviation CARES.

CARES uses an additional belt and shoulder harness that goes around the seat back and attaches to the passenger lap belt to provide restraint for the upper part of the body. It is designed for children weighing between 22 and 44 pounds. The device provides a smaller and lighter alternative to using forward-facing child safety seats. CARES is not approved for use in motor vehicles.


If there's turbulence, even the most loving arms can't hold him.
You make sure your carry-on bag fits overhead. You tuck your purse under the seat in front of you. You secure your seat back and tray table in their upright positions. Doesn't your child deserve the same protection? If there's turbulence during a flight, a child safety seat is the safest, most secure place for your little one. To learn more about safe air travel with children, visit www.faa.gov.
Federal Aviation Administration
TURBULENCE happens.

"We want to provide parents with options so they can make the right decision for their children when they travel by air," said FAA Administrator Marion C. Blakey. "We're encouraging child seat manufacturers to design new types of devices that meet the FAA's stringent standards."

Unlike hard-backed child safety seats that are approved for use in airplanes and motor vehicles, CARES is designed and tested specifically for safe use in airplanes only. Previously, the FAA had allowed only airlines to provide these types of additional child safety devices, but no U.S. airlines presently provide them.

According to the FAA, the safest place for a child on an airplane is in an approved child safety device, not on a parents lap. The agency encourages, but does not mandate, the use of child safety devices on airplanes because of the increased safety risk to families who, if forced to purchase an extra airline ticket, might choose to drive. The risk to families is significantly greater on the roads than in airplanes, according to FAA and National Highway Traffic Safety Administration (NHTSA) statistics.

AVIATION WEATHER ENCOUNTER STUDY

Editor's Note: This non-FAA study is being conducted by a retired FAA researcher.

General aviation pilots are needed to participate in a study of the human factors of flights into or near adverse weather. This study is designed to improve our understanding of the events and circumstances surrounding flights into or near adverse weather. Pilots who participate will be asked to complete an anonymous questionnaire covering the events leading up to the adverse weather event, what happened when they were in or near the adverse weather, and what happened afterwards.

General aviation pilots with all levels of experience are needed. If you have been on a flight in which you ran into potentially hazardous weather conditions, or if you have been on a flight in which weather was a significant factor that you avoided successfully, we need to learn from your experiences.

This study is being conducted over the Internet. Pilots may access the study, and find more detailed information, by going to: <http://www.avhf.com>.

This is an international study being conducted by leading aviation human factors researchers from around the world. The data from this study will be used to identify ways to improve safety of general aviation. The results of the study will be published in scientific journals, and copies of the report will be provided to all participants upon request.

The researchers believe that this study can provide very valuable insights into the causes of weather-related accidents—the single largest cause of fatal general aviation accidents. Pilots who participate in the study will make a significant contribution to improving aviation safety.

For more information, please visit the Web site <www.avhf.com> or contact the Principal Investigator for the study, Dr. David R. Hunter at <FlySafe@avhf.com>.

SOUTH FLORIDA FSDO

Effective December 11, 2005, the FAA's Flight Standards Service initiated the process of consolidating the Flight Standards District Offices (FSDO) located in San Juan, Miami, and Ft. Lauderdale into one organiza-

tion that will be know as the South Florida FSDO. The South Florida FSDO will have responsibility for all the applicable Title 14 Code of Federal Regulations operations with the exception of part 121 and part 125 operations, which will be managed by the South Florida Certificate Management Office (CMO).

This consolidation was initiated in concert with the FAA's on-going efforts to reduce costs while still providing the necessary aviation oversight and services. Our goal is to continue to provide the type of services that have come to be expected from the FAA in South Florida, Puerto Rico, and the U.S. Virgin Islands. Our Customer Service Initiative will continue to be an instrumental component to measure the success of this initiative. Additionally, although the offices will be known as the South Florida FSDO, there will remain an appropriately staffed office in San Juan, Puerto Rico.

FAA PUBLISHES NEW COMMERCIAL SPACE SAFETY STANDARDS

The FAA and U.S. Air Force (USAF) Space Command has issued new common federal launch safety standards designed to create consistent, integrated space launch rules for the nation.

"The consistent government approach will make expendable commercial rocket launch operations safer, more efficient and less costly," said FAA Administrator Marion C. Blakey. "In addition, the new FAA rules will ensure the same safety standards for rocket launches apply to both federal and non-federal launch sites."

This new rule will strengthen public safety by harmonizing launch procedures that identify potential problems early and by implementing a formal system of safety checks and balances. The new FAA regulations govern commercial launch operations at federal and non-federal launch sites.

"For the first time, the regulations on commercial launches will have common standards applied by the FAA and the Air Force," said FAA Associate Administrator for Commercial Space Transportation Patricia Grace Smith.

Both the FAA and the USAF have congressionally directed responsibilities for the safety of licensed launches from Air Force launch ranges. Since 1997, the FAA Office of Commercial Space Transportation and USAF Space Command have worked together in a formal partnership to develop, maintain, improve and document common launch safety requirements. Most commercial space launch activities licensed by the FAA have taken place at the national launch ranges at Cape Canaveral Air Force Station, FL and Vandenberg Air Force Base, CA, which are both operated by USAF Space Command.

FAA'S 10 YEAR PLAN FOR HIRING NEW CONTROLLERS

The FAA has released an updated Air Traffic Controller Workforce Plan designed to address anticipated retirement and replacement of air traffic controllers over the coming decade. The revised document outlines the agency's plans to hire more than 11,800 new air traffic controllers over the next 10 years.

The plan is the first update to *A Plan for the Future: The Federal Aviation Administration's 10-year Strategy for the Air Traffic Control Workforce*, which the FAA released in December 2004. The revised plan is based on updated traffic forecasts, experience with productivity increases and actual retirements and improved mathematical models.

"The controller workforce plan ensures that the FAA will have the right number of controllers in place at the right time to address the controller retirement bubble," said FAA Administrator Marion C. Blakey. "We are focusing on all aspects of the process, including recruitment, hiring, training and staffing requirements."

The agency noted that it has begun hiring and training new controllers, having already hired more than 700 candidates this year. The current pool of controller candidates from various hiring sources exceeds 3,700, which is sufficient to meet staffing needs for the next several years.

In addition to the hiring schedule, the plan also addresses steps the agency is taking to improve the training process for new controllers. It notes that in fiscal year 2005, the FAA installed four new high-fidelity tower simulators at the FAA training academy to provide a realistic tower environment. In addition, in March 2005, the FAA installed a new high-altitude training lab at the FAA Academy in Oklahoma City, OK and new tower cab simulations at Chicago O'Hare, Ontario, CA and Miami facilities. The plan notes that the FAA expects the use of the high-fidelity simulators will reduce training time and improve safety.

The FAA currently expects that more than 10,000 controllers will leave the work force between now and 2015 through retirements, promotions and other forms of attrition. Attrition estimates are expected to be more precise with each annual update of the plan due to updated traffic forecasts, retirement numbers and refined mathematical models.

The Internet site for the Air Traffic Controller Workforce Plan is <http://www.faa.gov/airports_airtraffic/air_traffic/controller_staffing/> and for hiring information is <http://www.faa.gov/jobs/job_opportunities/airtraffic_controllers/>.

Editor's Runway

Share Your Love of Aviation Before It Is Too Late

Aviation is a small world. I was reminded just how small that world was in August. For several years, when I would drive to my hometown in Ohio, I frequently would stop along the way at the nearby county airport. The purpose of each trip was to see if the little green glider was still tied down under the open aircraft shelter. At one point, I had checked the Internet for the registered owner with the expectation of calling the owner and asking if the glider was for sale. And each trip, I promised myself that I would call as soon as I returned to Virginia. I never did. But I knew the glider never flew because its main tire was flat, its tail wheel was missing, and the paint had not been touched in years. Imagine my surprise when I drove into the parking area and saw a "For Sale" sign on the little glider. The sign listed the owner's name and telephone number along with an asking price. The following day, I returned to the airport to get a better look at the aircraft. Since I had talked to the owner, I felt I could give the glider a more detailed inspection.

As I walked around looking at the glider, opening the canopy, and checking the interior, a gentleman with a hangar behind the open sided covered tie-down area walked over to say hello. As friendly as he was, I had the suspicion he was also checking out this stranger paying way too much attention to the glider. I asked him about the glider. As we chatted, he said he was waiting to take a World War II veteran for a flight. I also learned his son was an FAA air traffic controller in Virginia. The world was getting smaller by the minute. Then his "veteran" arrived. As the gentleman got out of the car his wife was driving, he looked very familiar. Searching my memory for 40-plus years of information, I thought I knew him. With a familiar smile, out-reached hand, and a soft-spoken hello, he introduced himself. I had known him. He had operated a business in the village I grew up in for years. He also had a love of aviation. He had owned and flew a Cessna 172 for more than 30 years until he had lost his medical. Until I left home to join the military, he was the only pilot I knew in the village. I had not seen him in more than 40 years. The world was getting really small at this point.

As he and his friend prepared to depart on a classic $100 hamburger cross-country flight in a beautiful blue and white Cessna *Cardinal*, I thought how great it was that the aircraft owner would frequently take Bud flying. Although a major aviation group has spent years sponsoring rides for youngsters and teenagers, I have only read of a few pilots flying those who served in WWII. Although Bud was not a WWII pilot, poor vision, he said he learned to fly as soon as he came home after the war. A later article will tell more about Bud and his love of flying and how I went back to the airport to interview him. But that is another story, but as Bud told me, more of his friends are dead than living. Time is running out for his generation. The challenge now is how can the current generation share its love of aviation with those from Bud's generation. Most are no longer able to fly because of age or medical condition, but their love of aviation is as strong today as it was those many long years ago when that generation learned to fly either in battle or after returning home. Let us not forget the past. Maybe, you too can say, "I am waiting to fly a World War II Vet."

U.S. Department
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